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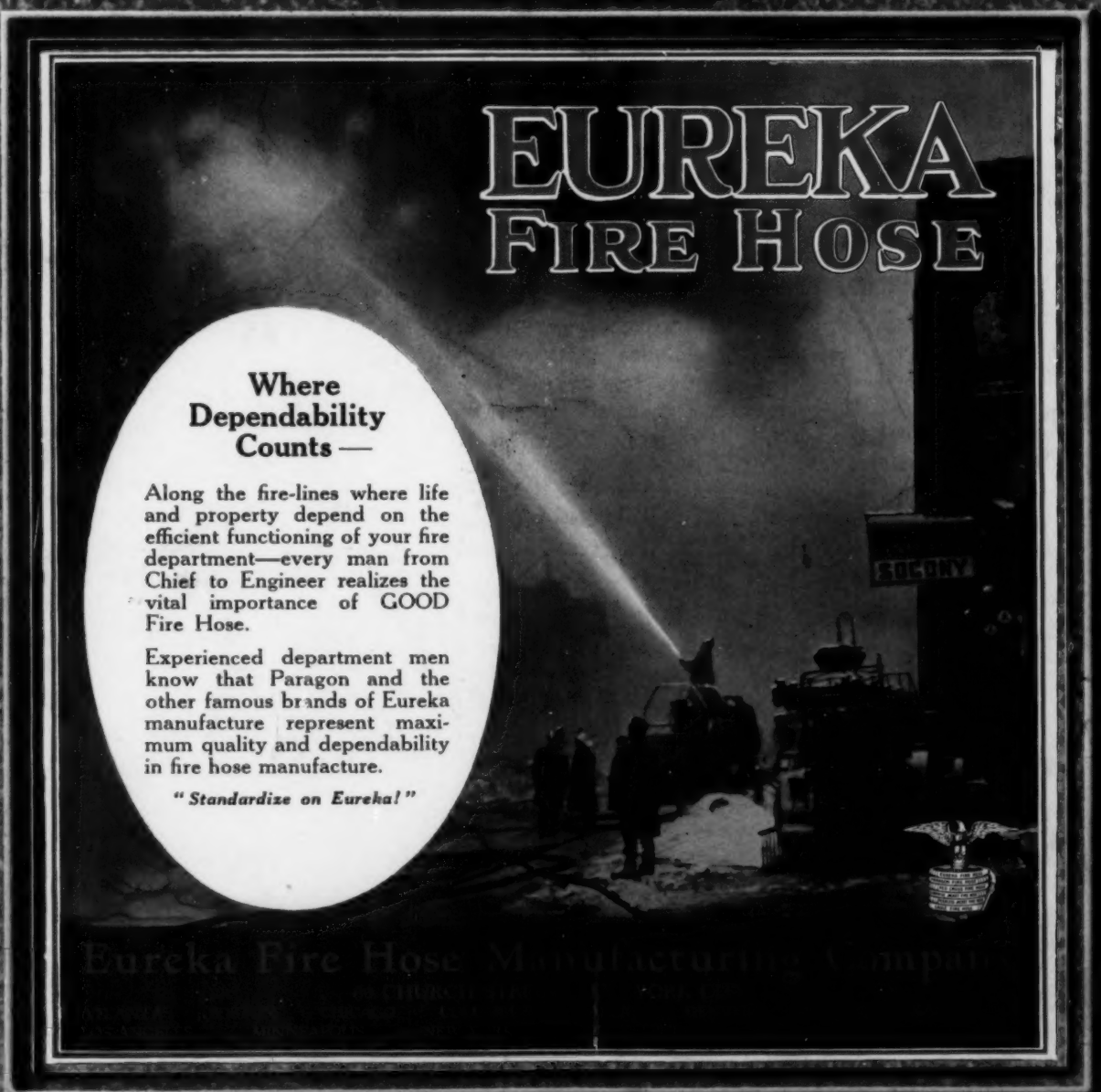
JUNE 10, 1926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Fire Chief
Salina, Kansas

At 1:45 on the afternoon of March 26th, 1925, the Salina Fire Department received an alarm from the Shellabarger Milling Company. On arriving at this fire we found it burning fiercely in the second story of an old three-story frame elevator, which was located between two concrete mills and connected with them.

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The fire was controlled, after three hours of hard fighting, with eight hose lines, two of which were kept in service all night and until noon next day. The fire loss was $105,000.

BEN MOLBERT
Fire Chief

Goodrich Hose was used in bringing this fire under control. For fifty-six years its unvarying superior quality has played a leading part in developing national fire fighting efficiency.

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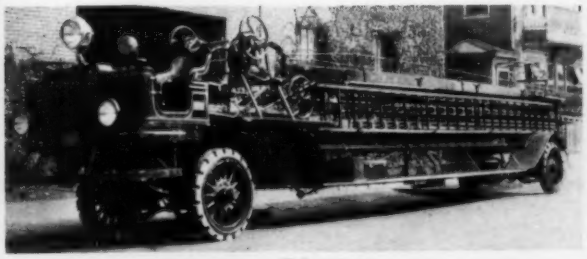

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FIRE ENGINEERING

A Consolidation of FIRE AND WATER ENGINEERING and THE FIRE ENGINEER

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Order! Order!

THIS month ushers in the season of conventions—and it is interesting to note that under the heading "Convention Dates" FIRE ENGINEERING already lists some forty meetings of interest to fire officials between the months of June and October.

¶ No single man—not even an active fire apparatus salesman!—could possibly be present at all of them, scattered as they are from Coast to Coast,—and yet FIRE ENGINEERING will be represented at each of them.

¶ At some of the larger meetings, such as that of the New England Association of Fire Chiefs, we will have several representatives from our headquarters office; at others the Association Secretary will represent us; but wherever fire-fighters meet, there you will find copies of FIRE ENGINEERING representing the best interests of the fire prevention and fire fighting profession and serving as spokesman for the further development of the field.

¶ And our thousands of faithful readers, both at their conventions and at home, find the advertising pages of FIRE ENGINEERING just as interesting as the news and editorial pages.

¶ What an opportunity for the manufacturer who wants to present his product to this great audience without the necessity of attending forty conventions!

The Publishers

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Entered as second class matter at the Post Office, Albany, N. Y. January 29, 1926 under the Act of March 3, 1879.

Ahrens-Fox

Tractor Ladder Trucks
in Manchester, New Hampshire

WHEN the Fire Department Officials of this progressive New England city received their first Ahrens-Fox Non-Aerial, Tractor Drawn Ladder Truck, they were so well pleased with its many desirable features that they placed an order for another one the very same day.

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This model was designed by experienced Ahrens-Fox fire apparatus engineers, is constructed of the highest grade materials obtainable, is built by experts with the aid of the most improved machinery in an up-to-date factory.

All in all, we honestly believe this ladder truck to represent the finest piece of apparatus of its type on the market today—and we shall be glad on request to send you complete information.

"Nothing is too good for fire service,
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In keeping with the GARL policy to make fire alarm and police signaling as simple and reliable as possible GARL boxes are regularly built for telephone communication with headquarters. This telephone communication does not interfere with signals from other boxes on the same circuit being sent in.

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Simplicity of construction which gives low first cost and insignificant maintenance expense.

Absolutely non-corrosive, failure-proof mercury contacts, which always give signal and give it right.

No complications in cross-signals. Two boxes pulled on same crcuit easily located.

As might be expected, GARL propositions are creating a new interest wherever police and fire alarm systems are under consideration. Favorable decisions are being made on many jobs. Possibly this is a good time to start the "ball-a-rolling" for a new system or needed additions in your town.

Send us your specifications and requests for quotations

GARL SIGNAL boxes are of atttractive design and distinctly storm-proof

Note the simplicity of internal construction. Nothing to get out of order or to confuse the laymen.

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Akron, Ohio

A RELIABLE FIRE ALARM SYSTEM MEANS LOWER FIRE LOSSES

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insist on genuine Firefoam

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EXPERIMENTS have no place in municipal protection. Professional fire-fighters accept a new extinguishing method only after the most exhaustive demonstrations.

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Above: laboratory illustration showing how two chemical solutions in genuine Foamite *equipment combine to form Firefoam, which floats on liquids, clings to any burning surface, smothers fire and insulates against reflash. At right* — Foamite *2½ gal. Splash-Proof Extinguisher, which generates 20 gallons of Firefoam*

Millions of tough bubbles, forming an air-tight blanket of Firefoam that resists fierce heat, holds fast despite strong drafts, and kills fire without the soaking damage to property done by water or liquid chemicals. The formula for generating this foam is exclusive with Foamite-Childs

FIREFOAM quickly smothers out fiercely blazing oil, gasoline, paint, grease, etc.— as well as ordinary combustibles. Moreover, this upstanding, heat-resisting foam "insulates" burning material and allows a nearer approach to the base of the fire. And it does practically no damage to property.

Success invites imitation—but time alone will show whether the established efficiency of the *Foamite* method can be improved upon.

A generation of designing and building fire-fighting equipment, from hand extinguishers to complete motor apparatus, enables Foamite-Childs to offer genuine *Foamite* Protection in forms suitable for any municipal need and within reach of any municipal budget.

Write for specifications and prices of *Foamite* 2½-gal. Splash-Proof Hand Extinguishers and *Foamite* Tank Equipment for motor apparatus.

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Fire Protection Engineers and Manufacturers

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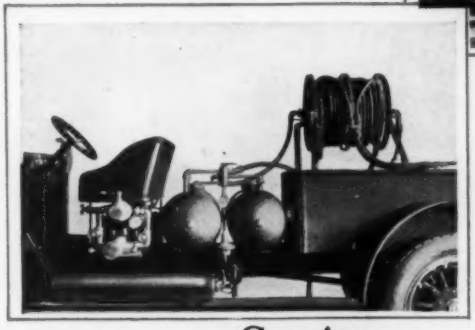

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Genuine

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A Complete Engineering Service

Against Fire

ROTARY NORTHERN PUMPS

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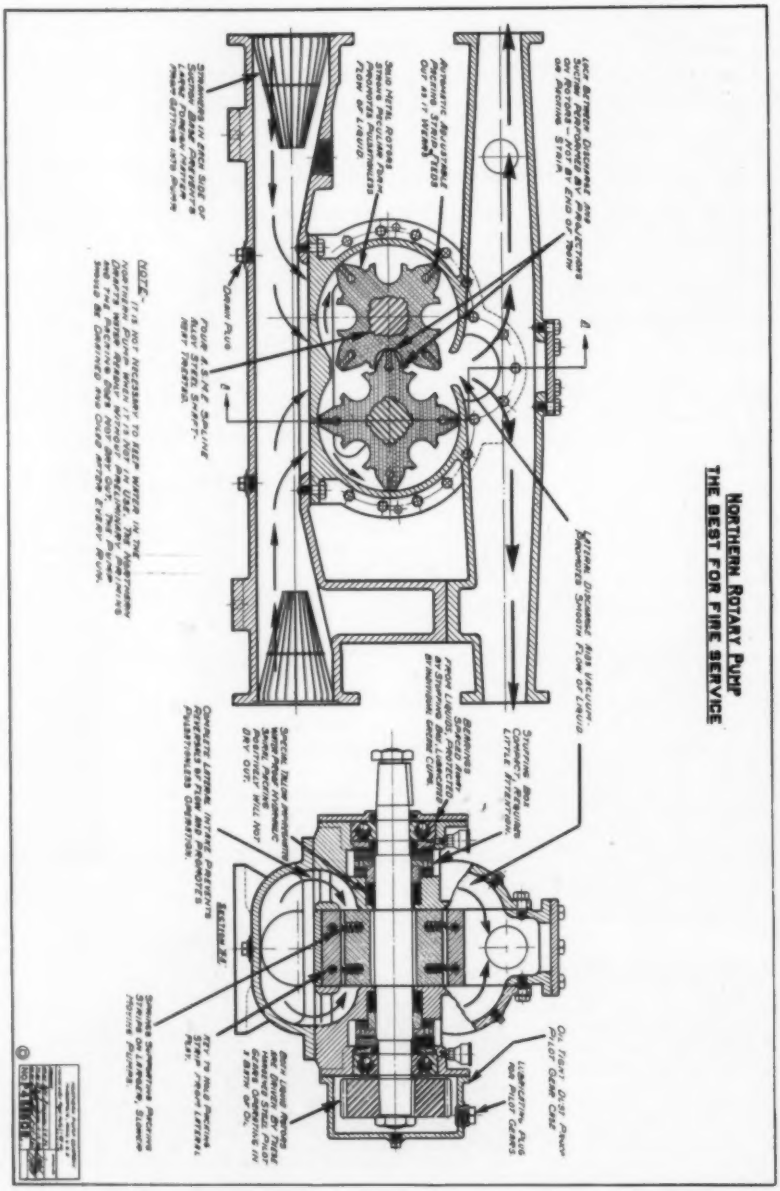

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1000 Gallons of Blazing Oil—

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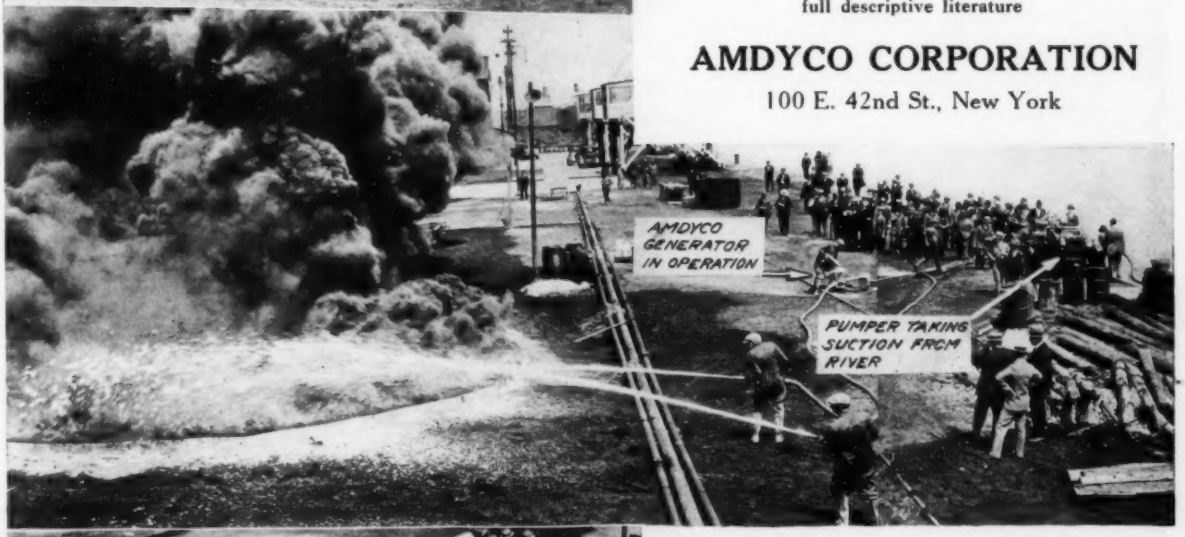

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THESE PHOTOGRAPHS SHOW—

Top—1000 gals. oil burning full blast. Center —Just as two Amdyco foam streams were applied, with pumper feeding water to generator. Bottom—Fire entirely out less than three minutes later.

Pumper was brought into action and generator and hose lines hooked up, all in one minute twenty seconds.

A little journey through the GAMEWELL FACTORY

Inside the Stock Room Door

In its stock room this Company has somewhat of a unique problem. Where the average automobile factory carries some 20,000 different parts in stock, the Gamewell Company must carry some 35,000. Fire and police systems give from twenty to fifty years service. They seldom wear out but they do meet with accidents.

Hundreds of Gamewell municipal and industrial systems are installed throughout the country. Thousands of different pieces of apparatus are in service in these systems and parts must be kept for most of them. Few concerns have such a stock problem on their hands.

Each new fire alarm system contains thousands of additional parts which the stock room must also handle. The equipment regularly carried in stock ranges from a semi-assembled police desk weighing a ton or more to platinum contacts which run a hundred or more to a pound; from rods of three inch brass to a tenth of an ampere fuse wire with a diameter of one thousandth of an inch.

Careful supervision must be kept over this stock, at all times. If too large quantities are purchased, there will be a tie-up of capital with its resultant loss. On the other hand if too small a stock is maintained production suffers and the emergency service, so essential in this business, is impaired.

A Safety Razor Will Be Given

for each item meeting the requirements of our $500.00 Firemen's Relief Contest whether it wins the Contest or not. If you have not seen the details write for bulletin

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Newton Upper Falls, Mass.
"A Box A Block"

FIRE ENGINEERING

(A Consolidation of FIRE AND WATER ENGINEERING and THE FIRE ENGINEER)

The Leading Journal of the Fire Protection Profession

VOLUME LXXIX JUNE 10, 1926 NUMBER 11

Manchester is Well Protected Against Fire

Has Well-Equipped and Thoroughly Drilled Fire Department and Modern Water Works—Some History of the Fire-Fighting Forces

By HARRY BELKNAP, Boston, Mass.

THE Manchester Fire Department is under the general supervision of a board of fire commissioners consisting of three members, who are appointed by the mayor for three year terms, one appointment being made each year. The board is at present composed of William B. Burpee, chairman; Arthur L. Prince, and Eugene Quirin.

Chief Charles H. French, Manchester, N. H.

Chief Charles H. French, the popular and efficient executive head of the department, has been a member of the Manchester fire force for 23 years and has been chief since July 1, 1917. He is first vice-president of the New England Association of Fire Chiefs and a member of the International Association of Fire Engineers and of the Fire Chiefs' Club of Massachusetts.

There are two deputy chiefs, Edwin W. Merrill and Arthur J. Provost. The department personnel is about 80 per cent permanent firemen, the remainder being callmen and volunteers. The paid force consists of 117 men, 109 of these being the fire fighting force. There are 32 call firemen and two volunteer companies located in outlying sections of the city.

Apparatus Modern and Well Equipped

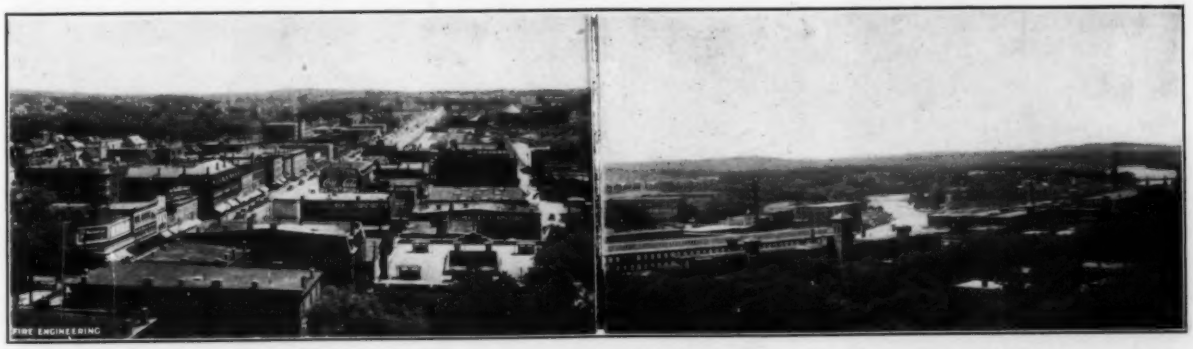
The apparatus is modern and well equipped. There are eight motor pumping engines, six of these being Ahrens-Fox quadruplex piston type pumps and the other two Seagrave centrifugals. Engine 4 is an Ahrens-Fox engine of 1,000 gallons per minute pumping capacity; the other engines are of 750 gallons capacity each. There are six motor hose wagons one of which is equipped with a 250-gallon booster pump. Two aerial hook and ladder trucks and four city service trucks are in service, all motor driven. The aerial trucks are both of Ahrens-Fox manufacture with 85 ft. extension ladder and Dahill hoist which operates by compressed air. They have specially designed ladder beds and carry besides the aerial, 13 other ladders including a 50 ft. extension, 3 roof ladders, and a collapsible ladder. There are two Ahrens-Fox city service trucks, one Robinson, and one American-La France truck. These are equipped with 50 ft. extension ladders and one of the trucks is fitted with a tiller. Two Amoskeag steam fire engines are kept in reserve, also a horse drawn chemical engine and two hose and ladder sleds for winter use.

Personnel of the Department

J. Edwin Rogers is superintendent of fire alarms and Parker E. Merrill is assistant superintendent. Capt. Tom L. Kellogg is clerk of the fire department and Capt. Philip N. Putney is supervisor of motor apparatus. The following captains are in command of companies: Albert W. Smith, A. M. Tuson, M. R. Maynard, J. J. Healy, Asa W. Gage, William J. Arnold, Clarence A. Whitcomb, Frank H. Harvey, Henry C. Crosby, Irving S. Bryant, William L. Comire, Harvey E. Harris, and James J. Collins. There are also eighteen lieutenants. The department is operated on the one day off in four system with 14 days annual vacation with pay. Master Mechanic Walter Morse is in charge of repairs to department apparatus at a shop in the rear of headquarters and Deputy Chief Provost directs the department drill school. New firemen are given 30 days instruction and operators of pumping engines are given two weeks special instruction.

The Fire Stations

There are ten fire stations, including the large headquarters building on Vine Street where are located Engine Company No. 1, Engine Company No. 4, Hose Company No. 1, and Hook and Ladder Company No. 1. Engine 2 is situated on Main Street, near Douglas Street; Engine 3 on Lake Avenue near Massabesic Street; Engine 5 at Webster and



Left, View of Manchester, Looking South from Hotel Carpenter, Headquarters of the New England Chief's Convention. Right, The Amoskeag Mills, which will be One of the Points of Interest During Convention Week.

Chestnut Streets; Engine 6 at Rimmon and Amory Streets; Engine 7 on Somerville Street, near Hall Street; Engine 8 on Maple Street, near Nashua Street; Hose 3 on Elm Street opposite Queen City Avenue, South Manchester; Hose 4 at Weston and Concord Streets; Ladder 3 with Engine 3; Ladder 5 with Engine 5; Ladder 6 with Engine 6; Ladder 7 with Engine 7; and Ladder 8 at South Main and McDuffie Streets.

A steel frame drill tower, 68 feet in height, is located in the

L. to R. Deputy Chief Edwin W. Merrill, Captain Tom L. Kellogg, Chief Clerk, and Deputy Chief Arthur J. Provost, Manchester Fire Department

rear of the quarters of Hose Company No. 4 on Weston Street. This is near the summit of a hill from which a wonderful view is obtained of the surrounding country.

The two headquarters engine companies use 3 inch cotton double jacketed rubber lined hose and the other companies use 2½ inch hose of similar pattern. Three engine companies and two ladder companies respond to first alarms in the mercantile and manufacturing districts.

Moderate Fire Loss During Five Years

The captains of companies with one or more privates make building inspections semi-annually in the business and tenement districts of the city.

A report by the Committee on Fire Prevention and Engineering Standards of the National Board of Fire Underwriters issued in December, 1925, states that "The records of the Manchester Fire Department show that, of fires requiring the use of apparatus during 1924, about 75 per cent were extinguished by chemicals or small lines. Engine lines with shut-off nozzles with 1¼ inch tips and hose lines with 1⅛ inch tips are used or ordinary fires. Engines connect to hydrants at once; lines are laid from fire to hydrant or vice versa, using double male and female connections. Standing rules provide that the second line laid be connected to the outside sprinkler connection at fires in sprinklered buildings."

The report further states that the gross fire loss for the past five years as given in the fire department records amounted to $1,293,237, varying from $174,720, in 1924 to $311,503 in 1922. The number of actual fires varied from 271 in 1920 to 350 in 1923, with an average loss per fire of $859, a moderate figure.

Equipment of Fire Alarm System

The fire alarm office is on the third floor of the fireproof section of the fire headquarters building. The equipment is a Gamewell manual system with automatic features and includes a protector board for 18 box, 6 primary and 6 secondary alarm and 6 tapper circuits; two 16 circuit battery charging boards; two 8 circuit box relay boards; a 6 circuit each for primary and secondary alarm circuits; a 1 dial, 4 figure, 2 speed manual transmittter; four 4 circuit punch registers for incoming alarms; one 6 circuit punch register with time stamps for outgoing alarms on primary alarm circuit and another without time stamp on secondary alarm circuits; a 16 circuit automatic repeater with contacts on the drum for 16 alarm circuits of which 6 are used for alarm circuits and 1 controls the time transformer; a time transformer for automatic transmission of alarms over secondary alarm circuits, and an automatic repeater for transmitting alarms over tapper circuits to call members' residences and places of business. All switchboards and instruments are on incombustible mountings with the exception of the telephone switchboard. The current is supplied by 962 storage battery cells in duplicate sets and in a separate room. Each set of batteries is charged every other day, with a monthly overcharge, from one of the duplicate motor generator sets, serviced from a 110 volt A. C. special house circuit. An emergency 506 volt D. C. charging circuit from the Manchester Traction, Light and Power Company is provided in the battery room.

There are 129 fire alarm boxes including five in public institutions and five in the yards of the Amoskeag Mills. Eight tower

(Continued on page 563)

Upper, Left, Fire Headquarters, Vine Street, Manchester, N. H.; Upper, Right, House of Ladder Co. 8, South Main Street, West Manchester; Lower, Left, House of Hose Co. 4, Weston Street, with Drill Tower in Background; Lower, Right, House of Engine Co. 6 and Ladder Co. 6, Rimmon Street, West Manchester

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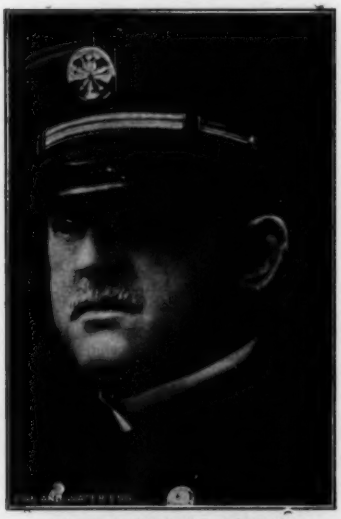


CHIEF PATRICK J. HURLEY
Ex-President
Holyoke, Mass.

OFFICERS, NEW ENGLAND ASSOCIATION OF FIRE CHIEFS

Two Errors Responsible for Large Fire

Transmission of First Alarm Following Still Alarm Poor Judgment; Failure to Cover Exposures at First Permits Fire to Spread From Car Barn into Adjacent Buildings

THE fire described in the last issue of FIRE ENGINEERING featured two errors in judgment on the part of the company officer arriving with the still alarm assignment at a fire in a large car barn.

The first of these was the failure to transmit a second rather than a first alarm following response on a still alarm assignment; and the second, the failure to cover exposures first instead of operating on the fire.

The layout of the property involved is shown in Fig. 1 and Fig.

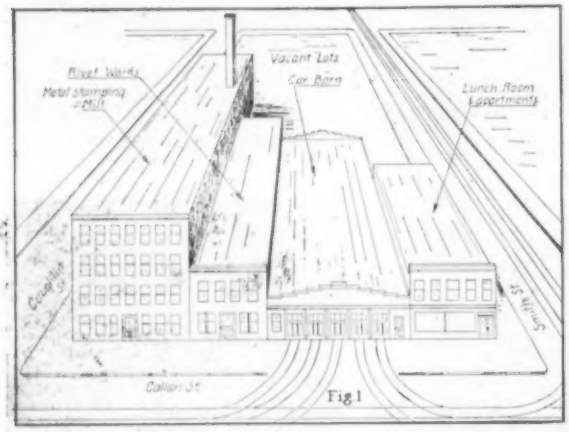


Fig 1

2, the first sketch indicating the relative proportions and placement of buildings while the latter sketch shows the location of the fire area and surrounding buildings.

As described in the original account of the fire, the large car barn was located directly adjacent to a rivet works, two stories in height and of brick and joist construction. This building was in turn directly in contact with a four story metal stamping mill of similar construction.

To the right of the car barn was a two-story apartment and restaurant building.

The large open area in the car barn and the presence of highly combustible materials made the fire a fast traveling one. On the other hand the failure of the architects in constructing this building to provide any form of ventilation whatsoever in the roof also added to the difficulties of the fire department in handling the fire due to the backing up of the heat and the involving of all cars beneath the roof.

As noted in the previous article, the fire department in the city in which this fire occurred consisted of the following:

Engine Co. No. 1, 1,000 gal. triple combination; Engine Co. No. 2, 1,000 gal. pumper and hose wagon; Engine Co. No. 3 750 gal. triple combination; Engine Co. No. 4, 750 gal. triple combination; Engine Co. No. 5, 750 gal. triple combination; Engine Co. No. 6, 750 gal. triple combination; Ladder Co. No. 1, 60 ft. service ladder. There was one steam fire engine in reserve in the department.

Response to alarms at the locality of this fire was as follows:
First alarm, Engine Cos. Nos. 1 and 2 and Ladder Co. No. 1.
Second alarm, Engine Cos. Nos 3 and 4.
Third alarm, Engine Cos. Nos. 5 and 6.

The water supply was satisfactory, there being no shortage in supply of water although the pressure did not run above 40 pounds in the neighborhood of the fire.

Hydrants were available as shown in Fig. 2.

The Fire

The fire started about 3 a. m., apparently beneath one of the cars in a quantity of waste which had been left there. At the time the fire was discovered it had risen through this car and had involved three adjacent cars which were burning at the time of the discovery.

An alarm was transmitted by telephone and Engine Co. No. 1 was sent to the fire as a still alarm assignment. When it reached the blaze it had extended to the roofs of several other cars in the neighborhood of the cars which were burning upon discovery of the fire, and heat was banking beneath the roof and up over the cars throughout the born.

Engine Co. No. 1 stretched in two lines of hose each equipped with 1⅛ inch nozzle. One of the streams struck some exposed electrical apparatus and caused the men to drop the line. However, this did not keep the line long out of service for none of the men were injured.

These two lines operated through the Callan Street side of the car barn till it was found that the fire was beyond their capabilities, when the officer in charge of this first company transmitted a first alarm.

Here is where two mistakes were made.

Noting the extent of the fire and the likelihood of its involving the entire car barn area, which was very likely due to the fact that no ventilation could be readily provided, a second or even a third alarm would have been justified. This should have been transmitted, for a first alarm brought only one additional engine company and one ladder truck.

The second error was in trying to extinguish the fire with such limited equipment, thereby permitting it to spread to the rivet works adjacent.

This first company should have stretched in two lines, one to the rear to cover exposures and the other to operate on the fire, or cover exposures, if necessary.

Assume that a second alarm was transmitted. The response would then be, in addition to the engine arriving on the still alarm, the following: Engine Cos. Nos. 2, 3 and 4 and Ladder Co. No. 1.

The placement of these additional companies would be as follows: As stated previously, Engine Co. No. 1 was placed at hydrant No. 2 and two lines stretched into car barn. Immediately upon the arrival of additional apparatus if it had not already been done, one of these lines should be ordered through the rivet works to the rear to cover exposures.

The placement of the apparatus responding on the second alarm would be as follows: Engine Co. No. 2 at hydrant No. 6 and two lines stretched to the rear of rivet works, one to enter the rivet works if necessary and the other to cover the exposure at the car barn.

Engine Co. No. 3 at hydrant No. 3, and a single line stretched to car barn using a large nozzle. Engine Co. No. 4 at hydrant No. 5, stretching two lines, one to cover the apartment house and the other to operate at rear of car barn.

As soon as the lines from Engine Co. No. 2 have accomplished their purpose, they could both be concentrated on the car barn fire at the rear; likewise with the second line from

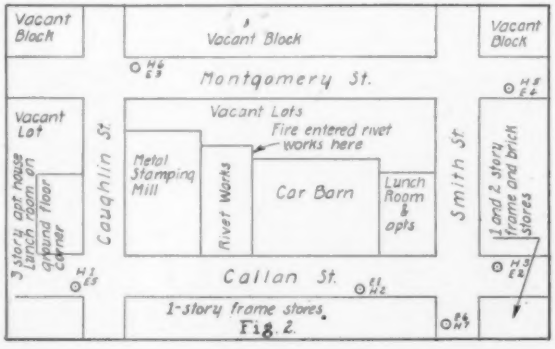


Fig. 2.

Engine Co. No. 1 which is operating in covering exposures; this line could be set to work on the car barn fire.

Only one of the lines from Engine Co. No 4 would be required for covering exposures, and if this line completed its work it too could be concentrated on the car barn.

This would give two small and one large lines operating at the Callan Street side into the car barn fire and four lines at the rear.

Streams, even of small calibre, and concentrated both front and rear of the car barn could handle the fire very satisfac-

(*Continued on page* 593)

Modern Fire Alarm Signalling

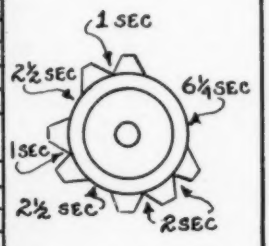
Boxes, Maintainence, How to Make Repairs—Proper Method of Timing Boxes

By E. E. KIERSTEAD, E. E.

THIS series of articles on subjects relating to the installation of municipal fire alarm systems will appeal to the men responsible for the proper upkeep of this form of communication. The author has had practical experience in this field and will describe the essential points of the system. He will answer questions submitted by the readers free of charge providing that a stamped envelope is enclosed for reply.

NO. OF BLOWS	½ SEC.	¾ SEC.	ONE NUMBER BOXES 1 SEC	1¼ SEC	1½ SEC	1¾ SEC	2 SEC	2¼ SEC	2½ SEC	2¾ SEC	3 SEC.
2	3½+	5½−	7¼	9+	10¾+	12¾−	14½	16¼+	18+	20−	21¾+
3	4+	6¾−	8¼	10¼+	12¾+	14¼+	16½	18½	20½+	22¾+	24¾
4	4½+	7−	9¼	11½+	13¾+	16¼	18½	20¾+	23+	25½−	27¾
5	5+	7¾−	10¼	12¾+	15¼+	18−	20½	23+	25½+	28¼−	30¾
6	5½+	8½−	11¼	14+	16¾+	19¾−	22½	25¼+	28+	31−	33¾
7	6+	9¼−	12¼	15¼+	18¼+	21½−	24½	27½+	30½+	33¾−	36¾
8	6½+	10−	13¼	16½+	19¾+	23¼+	26½	29¾+	33+	36½−	39¾
9	7+	10¾−	14¼	17¾+	21¼+	25−	28½	32+	35½+	39¼+	42¾
NO. OF BLOWS	¼ SEC.	¾ SEC.	TWO NUMBER BOXES 1 SEC.	1¼ SEC	1½ SEC	1¾ SEC	2 SEC	2¼ SEC	2½ SEC	2¾ SEC	3 SEC.
3	4¾+	7¼+	9¾	12¼−	14½+	17+	19½	22−	24¼+	26¾+	29¼
4	5¼+	8+	10¾	13½−	16+	18¾+	21½	24¼−	26¾+	29½+	32¼
5	5¾+	8¾+	11¾	14¾−	17½+	20½+	23½	26½	29½+	32¼+	35¼
6	6¼+	9½+	12¾	16−	19+	22½+	25½	28¾−	31¾+	35+	38¼
7	6¾−	10¼+	13¾	17¼−	20½+	24+	27½	31−	34¼+	37¾+	41¼
8	7¼+	11+	14¾	18½−	22+	25½	29½	33¼−	37¾+	40½+	44¾
9	7¾+	11¾+	15¾	19¾−	23½+	27½−	31½	35½−	39¼+	43¼+	47¼
10	8¼+	12½+	16¾	21−	25+	29¼+	33½	37¾+	41¾+	46+	50¼
11	8¾+	13¼+	17¾	22¼−	26½+	31+	35½	40−	44¼+	48¾+	53¼
12	9¼+	14+	18¾	23½−	28+	32¾+	37½	42¼−	46¾+	51½+	56¼
13	9¾+	14¾+	19¾	24¾−	29½+	34¼+	39½	44½−	49¼+	54¼+	59¼
14	10¼+	15½+	20¾	26−	31+	36¼+	41½	46¾+	51¾+	57+	62¼
15	10¾+	16¼+	21¾	27¼−	32½+	38+	43½	49−	54¼+	59¾+	65¼
16	11¼+	17+	22¾	28½−	34+	39¾+	45½	51¼−	56¾+	62½+	68¼
17	11¾+	17¾+	23¾	29¾−	35½+	41½+	47½	53½−	59¼+	65¼+	71¼
18	12¼+	18½+	24¾	31−	37+	43¼+	49½	55¼−	61¾+	68+	74¼
NO. OF BLOWS	½ SEC.	¾ SEC.	THREE NUMBER BOXES 1 SEC	1¼ SEC	1½ SEC	1¾ SEC	2 SEC	2¼ SEC	2½ SEC	2¾ SEC	3 SEC.
4	6+	9¼−	12¼	15¼+	18¼+	21½−	24½	27½+	30½+	33½+	36½
5	6½+	10−	13¼	16½+	19¾+	23¼−	26½	29¾+	33+	36½+	39½
6	7+	10¾−	14¼	17¾+	21¼+	25−	28½	32+	35½+	39¼+	42¾
7	7½+	11½−	15¼	19+	22¾+	26¾−	30½	34¼+	38+	42+	45¾+
8	8+	12¾−	16¼	20¼+	24¼+	28¾−	32½	36½+	40½+	44½	48¾+
9	8½+	13−	17¼	21½+	25¾+	30¼−	34½	38¾+	43+	47½+	51¾+
10	9+	13¾−	18¼	22¾+	27¼+	32−	36½	41+	45½+	50¼+	54¾+
11	9½+	14½−	19¼	24+	28¾+	33¾−	38½	43¼+	48+	53−	57¾+
12	10+	15¼−	20¼	25¼+	30¼+	35½−	40½	45½+	50½+	55½+	60¾+
13	10½+	16−	21¼	26½+	31¾+	37¼−	42½	47¾+	53+	58½−	63¾+
14	11+	16¾−	22¼	27¾+	33¼+	39−	44½	50+	55¼+	61¼−	66¾+
15	11½+	17½−	23¼	29+	34¾+	40¾−	46½	52¼+	58+	64+	69¾+
16	12+	18¼−	24¼	30¼+	36¼+	42½−	48½	54½+	60½+	66½+	72¾+
17	12½+	19−	25¼	31½+	37¾+	44¼−	50½	56¾+	63+	69½+	75¾+
18	13+	19¾−	26¼	32¾+	39¼+	46−	52½	59+	65½+	72¾−	78¾+
19	13½+	20½−	27¼	34+	40¾+	47¾−	54½	61¼+	68+	75−	81¾+
20	14+	21¼−	28¼	35¼+	42¼+	49½−	56½	63½+	70½+	77½−	84¼+
21	14½+	22−	29¼	36½+	43¾+	51¼−	58½	65¾+	73+	80½+	87¾+
22	15+	22¾−	30¼	37¾+	45¼+	53−	60½	68+	75½+	83¼+	90¾+
23	15½+	23½−	31¼	39+	46¾+	54¾−	62½	70¼+	78+	86−	93¾+
24	16+	24¼−	32¼	40¼+	48¼+	56½−	64½	72½+	80½+	88½+	96¾+
25	16½+	25−	33¼	41½+	49¾+	58¼−	66½	74¾+	83+	91½−	99¾+
26	17+	25¾−	34¼	42¾+	51¼+	60−	68½	77+	85½+	94¼−	102¾+
27	17½+	26¼−	35¼	44+	52¾+	61¾−	70½	79¼+	88+	97−	105¾+

BOX TIMING CHART



To find time of Boxes: Multiply time of 1 second Box of same number, by speed desired:

Example

Box 2-2-3
1 sec
2½ "
1 "
2½ "
2 "
6¼ "
15¼ SEC
x 4
61 SEC
Four Rounds 1 Sec Time

61 SEC x 2
122 SEC
Four rounds 2 SEC Time

SKETCH #8
Read written directions on timing of boxes.

Maintenance: Boxes should be kept clean and free from dust and dirt. The best way to keep them clean is to make a survey of condition and to clean out the boxes by means of a bellows or dust gun. Be sure that dirt has not found its way into the bearings of the movement. They should be oiled once every six months and done as follows: Use only Russian mineral oil or the best grade of watch oil; do not ever use any other kind or grade as it gums or will stiffen and collects dust which will eventually get into the bearing. Take a wooden tooth pick and dip the sharp end into the oil, placing a drop or two onto the end of the bearing and wiping off all excess oil; do not let the oil run down the movement. Never use a large amount as one or two small drops are more efficient.

After completing the oiling, plug out the box by means of a small plug provided for the purpose, or if a test is desired, pull out the silent test switch and let the box run—this enables the oil to work into bearing.

You should have some standard to follow in testing boxes and one is outlined here which may be arranged to suit your own needs. Each box should be tested once every three months, and this can be accomplished, by pulling out the test switch handle, or by plugging out the box and pulling the hook. This permits the box to run until it stops of its own accord. A note book record should be kept of the time the boxes were tested, result of test, etc. This is the proper time to make a note of any trouble which may be encountered with the box; for instance, the box may run jerky and irregular, the hook by means of which the box is started may stick and be hard to pull, perhaps in winding it one may by turning the winding key send in a stray blow. The door shunt may not be working or various troubles may be found at this time. These troubles should be noted and the box given attention at the first possible moment. Some of the things which may happen and their remedy will be explained further on in this article.

Once each year a punched record should be made of each box and cam. This may be accomplished by having a set time to send in test boxes right through to headquarters, at that time; or one can make the test by having a register, time stamp and battery hooked up on a board to act as a portable test set. The box is now cut out of the circuit, but particular care should be exercised to be sure you do not open the circuit. Hook in your test set and start the box permitting it to send in the entire four rounds—then cut the box back into circuit again. These records should be kept for future reference and sometimes are very valuable.

Boxes should be painted once every two years and more attention paid them when they are first installed, otherwise, in a few years time they will always be on the repair list. Nothing spoils

the appearance of a city or town so much as a fire or police box which has not been painted and attended to. And it certainly reflects no credit upon the city to have such a system. I have been in some cities where it was possible to judge the type of men in the fire and police departments as soon as one walked down the main street, by the appearance of the signal system. Economy is a good thing in its place, but its use in a fire department should be balanced by the value of human life. Give some attention to the poles upon which the boxes are mounted and be sure the poles are sound enough to have boxes attached. This will avoid replacements.

Repairing of Boxes

This section will commence with the outside door as it is the first place to encounter trouble. Sometimes it may happen that a key may break so that it is impossible to open the door. The best method of getting the door off is as follows. Scrape off the paint around the lock, which will uncover four screw bottoms. These screws come through from the inside of the door but are easily located. Obtain a drill slightly smaller than the diameter of the screw and drill a hole through the center of the screw. Use an old tap ground down square or a tool made for the purpose and back the screw out. When all four screws are out it will be possible to open the door. Be careful not to injure the threads when forcing out screws as the same hole will have to be used again to put the lock back on. The lock can now be taken apart and the key taken out. If the tumbler or latch is broken it will be necessary to send to the factory for a new part. When putting the lock back on be sure you use the right screws and do not let them protrude outside of the face of the door.

When putting on a new door it may not exactly fit the outer case, and it may be necessary to file down certain parts. Do not, however, file a great deal with out trying the fit to see if it is snug. The reason it is necessary to do this, is because of the warping of the outer case due to weather and age. Doors are now being made which are termed quick action doors and which are a big improvement over the old style. In this type it is not necessary to open the outer door to send in an alarm. These doors are made so as to be interchangeable and can be put on any type of box now in service. In installing these doors on old boxes. First: take off old door, leaving the hinges mounted; place new door on hinges and spot the holes so as door will shut properly; drill holes through door and tap for same size screws as was in old door; place door on hinges and screw up tight. It may be necessary to file a little on top or bottom side of hook pull bar in order to let the hook rest on it. It may be necessary to file the door as above to make a good fit. These doors are not very expensive and are highly desirable. The names of manufacturers will be furnished on request.

In repairing a box which has been burnt out by lightning or high tension current, it will be necessary to replace parts which are wholly or partially burnt, and the box should be rewired. It sometimes happens that in winding a box you will send in a stray blow. This is caused by the signal wheel being set too far ahead. You will notice that the closure on the first tooth is greater than any other time, this is necessary in order to make it non interfering. The wheel should be set back a little so as not to allow the backlash of the gearing to force the wheel back and let the contact arm drop down and open the circuit.

Some times a box will run jerky and the signal will be uneven and out of time. This is generally caused by the spring having soft spots or a weak part in it allowing the spring to slip causing the signal to be jerky. A new spring will result in a clear signal.

The door shunt contacts must be kept clean or the box will always be in the circuit allowing the magnets to be in the line all the time.

If a box shows open and you are sure it is in the wiring, connect a bell and battery in series leaving two long leads for test wires. Trace out each wire and place a lead on each end; if the bell rings the wire is not open; if it will not ring it is open and a new one must be put in. When testing this way do not expect to ring through coils and resistance and always disconnect a box from the line when working on it. To avoid confusion take wires off of binding posts when making tests so as not to ring back through another wire.

Setting Signal Wheels and Features of Boxes

To properly set the signal wheel on a Positive Non Interfering Succession Box it is very necessary to follow these instructions. Start the box without any current on the line when it is completing its first round—the armature is being mechanically restored by the box movement. The phosphor bronze shield fastened to the under side of the signal wheel, will raise the contact arm. When the box stops you will observe that the contact arm rests right on the shield a little ahead of the first tooth. When the box is pulled you will observe the fact that the closure at this point is of greater length than at any other time. This is the feature that gives it its non interference. When a box is pulled, if the line is already in use, the armature will drop away, and prevent the circuit breaker from responding to the wheel. In setting this wheel be sure that you do not set it too far ahead. It is best set by hooking up two boxes and making sure that it functions properly. Do not set it so that turning the winding handle will result in the line being opened. The non interference magnet is set so as to stay in the field at from 80 to 120 mill amperes and drop away below that point. The armature will stay in position with the test switch handle pulled out. The tapper or bell magnets are given the same adjustments. Always keep all contacts and moving parts clean and bright.

Positive Non Interfering Sector Boxes

The signal wheel is set so as to travel about ¾-inch before opening the line, but in very high numbered boxes must be shortened as much as is possible. All other types of Positive Non Interfering Boxes are set as above and the only adjustments necessary are to keep spring tension normal at all times.

Plain sector boxes should be set so as to allow the wheel to travel about ⅛-inch before the line is opened. These boxes are normally unwound and pulling the hook serves to wind them at that time. Always make sure that the back lash in the gears will not open the line when you wind a box. Master Box adjustments are the same as that of the Positive Non-Interfering Succession Box with the exception of the tripping magnets. Always have at least 30 volts on all circuits carrying master boxes. When repairing boxes be sure after finishing that you thoroughly clean out all chips and filings from the terminal blocks as it sometimes happens that a small chip will lodge in between the ground plate and one side of the line. This will cause a very bad ground and be very hard to locate later. When ordering parts from manufacturers always specify what type of box it came out of and send broken part along, as there are so many individual parts to fire alarm boxes, that a great deal of delay will be experienced in receiving parts should you try to describe it to them.

A word about fire alarm box paint. Always order this from the firm who supplied your boxes, as it is a special paint, specially prepared to stand the weather. Any kind which is supposed to be just as good is as practice shows, always inferior.

Timing of Boxes

This article will take up the timing of boxes alone, the timing of indicators, repeaters and so forth will be taken up in articles covering them alone. When you have decided to retime your system to a faster or slower time it is well to prepare for it before hand. First: Select a place where you will not be disturbed and preferable containing a bench. Next equip yourself with the following: a good stop watch, a rejuster or indicator timed for the time you intend your system to work on, a small gong and sufficient cells or battery to operate the test set. Hook up all the apparatus in series and leave good long leads to attach to your boxes. When you are ready to start retiming your system, go out on the circuit and select a box, cut it out of the circuit and leave a placard, notifying people to use next box. Cut the box out before disconnecting live wires. Disconnect live wires and take the three screws out holding inner case and bring box movement into work shop. The next step is to remove the glass shield over movement. Disconnect movement wires from box terminals and unscrew the movement taking it out of the case. Connect the movement in the test set you have made and be sure that armatures pick up. Be sure you can connect the box up properly before you take connections off of movement, Pull the box and be sure it works satisfactory before going further.

Now we will figure out the time of the box and an example case is now given. Suppose you have Box No. 223 and it is now operating at 1½ second time and you wish to make it 1 second time, you will see by looking at sketch No. 8 that there is just one second elapsed time between the time the first blow is struck and the second one, then a pause of 2½ seconds then a blow, 1 second space, another blow 2½ seconds space then 3 blows it being 2 seconds between the 3 blows, next an interval of 6¼ seconds until next round. The total time being 15¼ seconds for one round, and the total figure of the box is 7 blows. By reference to the chart you can find out the correct time for any 1—2 or three number box. For instance Box 74 equals 11 blows, presume the time to be one second, look in two number box list and find 11 blows. Now run down 1 second time column and you will see 17¾ sec. this is the correct time for the box. Plus and minus signs mean more or less as found. You will first find out the time for your box by reference to the chart, now assume you have Box 223 at 1½ second time being 22¾ seconds for one round and you wish to make it one second time or 15¼ seconds for one round; the difference is 7½ seconds faster. Now you will notice on one of the shafts of the movement a small fan or

(*Continued on page* 593)

COURSE OF INSTRUCTION IN FIRE PROTECTION

AS GIVEN AT THE UNIVERSITY OF ILLINOIS

MECHANICAL INSTALLATIONS

By RAYMOND T. NELSON,
Engineer, Western Actuarial Bureau, Chicago

THIS twelfth installment of the University of Illinois Course in Fire Prevention continues the consideration of a type of common and very important hazards which the chief has to combat in his fire prevention work, the improper installation of mechanical and electrical devices:

INSTALLATION OF STATIONARY FURNACES Without Masonry Setting and Unlined (Fig. 10).

Ventilation: Rooms containing Medium Furnaces should be provided with adequate means of ventilation either in the ceiling or the wall above such furnace.

Floor: Floor under *Low Furnaces,* if combustible, should be protected by two courses of 4-inch hollow tile crossed with boiler iron on top, or three courses of brick, with middle course laid crosswise and on edge, with ventilating spaces, left open at ends, between. Protection should extend even with furnace at sides, front and rear, and in addition, if other than gas, electricity or liquid fuel is used, floor, for a distance of 18 inches in front, should be protected by a layer of ¼-inch asbestos covered with sheet metal or its equivalent.

Floor under *Medium Furnaces* should be fire proof or incombustible on incombustible supports extending 8 feet in front and 3 feet at sides and rear.

Lateral and Vertical Clearances: Clearance between furnace and unprotected combustible materials above and at sides, front and rear, should conform to the following minimum requirements:

	Grade of Furnace	
	Low	Medium
	inches	inches
Above	18	48
At sides and rear	18	36
In front	48	96

Metal Breeching or Smokepipe: Clearance between metal breeching or smokepipe and unprotected combustible materials, except where passing through floors or roof (see Figs. 13 and 14), should conform to the following minimum requirements:

	Grade of Furnace	
	Low	Medium
	inches	inches
Above	18	36
At sides	18	36

Metal Stacks: (See Figs. 13 and 14).

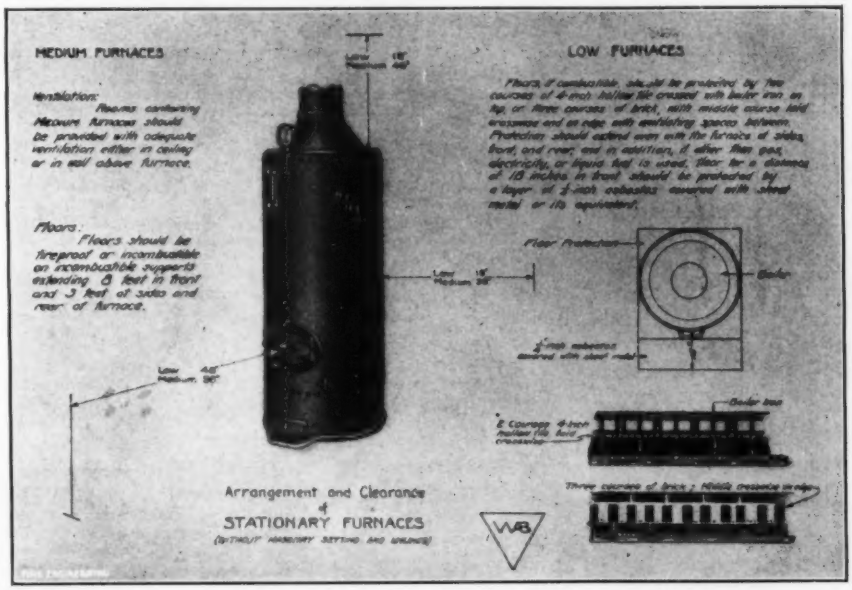


Fig. 10

INSTALLATION OF STATIONARY FURNACES With Masonry Setting or Lined With Fire Brick or its Equivalent (Fig. 11).

Ventilation: Rooms containing Medium Furnaces should be provided with adequate means of ventilation either in ceiling or wall above furnace.

Lateral and Vertical Clearances: Clearance between furnace and unprotected combustible material at sides, front and rear, should conform to the following minimum requirements:

	Grade of Furnace	
	Low	Medium
	inches	inches
Above	12	36
At sides and rear.	12	18
In Front	48	96

Metal Breeching or Smokepipe: Clearance between metal breeching

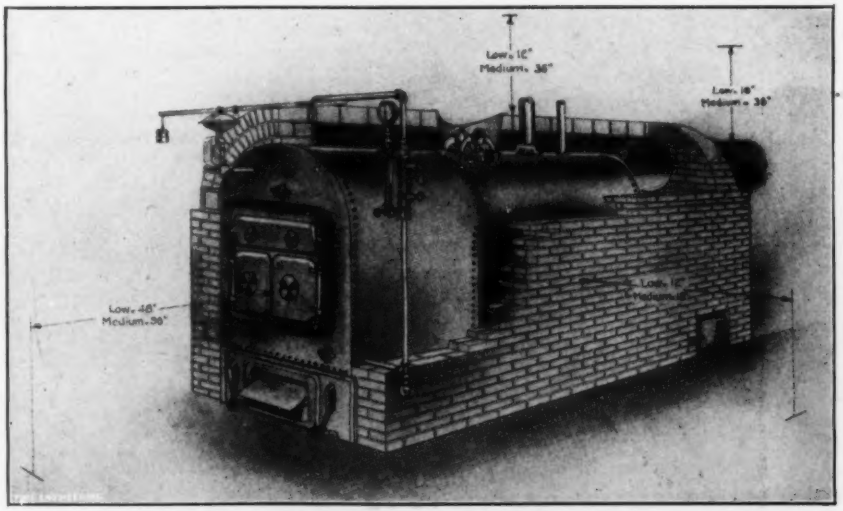


Fig. 11. Arrangement and Clearance of Stationary Furnaces (with Masonry Setting or Lined with Firebrick).

or smokepipe and unprotected combustible material, except where passing through floors or roof (see Stacks), should conform to the following minimum requirements:

	Grade of Furnace Low inches	Medium inches
Above	18	36
At Sides	18	36

Metal Stack: (See Figs. 13 and 14).

(To be continued)

CHIEFS' TRIP TO THE SOUTHLAND WITH THE EASTERN REGULARS

Itinerary of This Famous Annual Journey to the Fire Chiefs' Convention—Two Trips from New Orleans to Choose From

THE "Eastern Regulars," which includes those attending the fifty-fourth convention of the International Association of Fire Engineers from New York, New Jersey and Eastern points, will this year include in its return journey from the convention in New Orleans, two very interesting itineraries. The longer of these embraces a visit to the Island of Cuba and the shorter a stop-over at Atlanta, Ga., with a visit to the great Confederate Memorial monument at Stone Mountain.

The itineraries, with their dates, are as follows:

ITINERARY NO. 1

New York to New Orleans and return

IMPORTANT NOTICE: All schedules shown herein are based on Standard Time, one hour earlier than Daylight Saving Time.

GOING SCHEDULE

Saturday, October 16

Leave New York (Penn. Station)	3:10 p.m.	P. R.R.
Leave Newark (Market St. Station)	3:33 p.m.	P. R.R.
Leave Elizabeth	3:42 p.m.	P. R.R.
Leave New Brunswick	4:02 p.m.	P. R.R.
Leave Trenton	4:31 p.m.	P. R.R.
Leave West Philadelphia	5:13 p.m.	P. R.R.
Arrive Washington	8:15 p.m.	P. R.R.
Leave Washington	8:35 p.m.	R.F. & P.

Sunday, October 17

Arrive Atlanta	6:00 p.m.	S. A. L.
Leave Atlanta	6:30 p.m.	A.&W.P.

Monday, October 18

Arrive New Orleans	9:30 a.m.	L. & N.

All meals in Dining Car

RETURN SCHEDULE

Friday, October 22

Leave New Orleans	5:00 p.m.	L. & N.

Saturday, October 23

Arrive Atlanta	7:40 a.m.	A. & W. P.
Leave Atlanta	11:30 a.m.	(C.T.) S.A.L.

Sunday, October 24

Arrive New York	4:30 p.m.	P. R.R.

All meals in Dining Car

COST AND CONDITIONS

Including round trip ticket, sleeping car berth both ways, transfer of passengers and baggage to Hotel Roosevelt at New Orleans both ways, and meals in diner going trip only, and automobile trip to Stone Mountain and return at the cost of:

Lower Berth, 1 person	$116.52
Upper Berth, 1 person	110.66
Compartment, 1 person	266.44
Compartment, 2 persons, each	128.51
Drawing Room, 1 person	288.94
Drawing Room, 2 persons, each	139.76
Drawing Room, 3 persons, each	122.26

ITINERARY NO. 2

New York to New Orleans to Havana and Return to New York

Saturday, October 16

Leave New York (Pennsylvania Station)	3:10 p.m.	P. R.R.
Leave Newark (Market St. Station)	3:33 p.m.	P. R.R.
Leave Elizabeth	3:42 p.m.	P. R.R.
Leave New Brunswick	4:02 p.m.	P. R.R.
Leave Trenton	4:31 p.m.	P. R.R.
Leave West Philadelphia	5:13 p.m.	P. R.R.
Arrive Washington	8:15 p.m.	P. R.R.
Leave Washington	8:35 p.m.	R.F. & P.

Sunday, October 17

Arrive Atlanta	6:00 p.m.	S. A. L.
Leave Atlanta	6:30 p.m.	A.&W.P.

Monday, October 18

Arrive New Orleans	9:30 p.m.	L. & N.

All meals in Dining Car

Tuesday, October 19th — Thursday, October 21st
Wednesday, October 20th — Friday, October 22nd
At New Orleans Convention

Saturday, October 23

Leave New Orleans (United Fruit Line)	10:00 a.m.

Sunday, October 24

At Sea

Monday, October 25

Arrive Havana	9:00 a.m.

Tuesday, October 26
Wednesday, October 27

In Havana

Thursday, October 28

Leave Havana (United Fruit Line)	9:00 a.m.

Friday, October 29
Saturday, October 30

At Sea

Sunday, October 31

Arrive New York	12:00 noon

COST AND CONDITIONS

Including railroad and boat fares, Pullman and meals to New Orleans, meals and stateroom New Orleans to Havana, Havana to New York, transfer of passengers and baggage from train to hotel in New Orleans and from hotel to boat at New Orleans and from boat to hotel and return to boat in Havana.

Lower berth, 1 person, minimum accommodations on boat*	$200.39
Upper berth, 1 person " " " "	197.46
Compartment, 1 person " " " "	275.35
Compartment, 2 persons, each " " " "	206.39
Drawing Room, 1 person " " " "	286.60
Drawing Room, 2 persons, each " " " "	212.01
Drawing Room, 3 persons, each " " " "	203.26

* Minimum accommodations mean rooms, lower deck. All staterooms outside rooms. The following additional charges are for more commodious rooms on boat.

Extra large room, upper deck, each person	$21.00
Room with bath, upper deck, each person	48.00
Two people in suit, each person	76.50

The prices quoted in itineraries 1 and 2 do not include hotel reservations in New Orleans or Havana. However, I have made reservations in both cities for rooms at the following rates:

New Orleans, Hotel Roosevelt, rooms with bath and double bed (on court), 1 person	$3.50
Rooms, with bath, twin beds, each person	$4.00 & 5.00
Havana, Hotel Plaza, rooms, twin beds and bath, each person	3.50

BAGGAGE

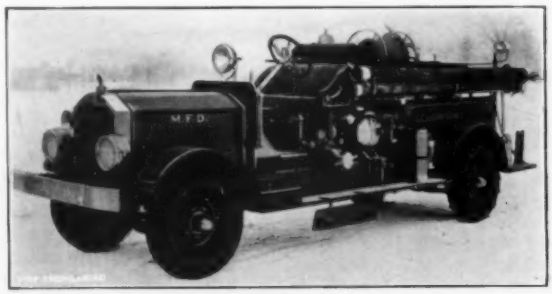
Each passenger will be allowed 150 pounds baggage free. Special baggage tags will be furnished each passenger. These tags must be fastened to all trunks and hand baggage. Baggage to be placed in car, should be delivered to baggage room, Pennsylvania Station, 33rd St., and 7th Avenue, New York, and at other stations where our special train is scheduled to stop at least one hour before departure of train. Be sure that all trunks and bags bear our official tag and that tag contains your name. Trunks and hand baggage will be transferred to and from hotel at New Orleans and Havana.

MAIL AND TELEGRAMS

Mail and telegrams for party en route should be addressed c/o Eastern Regulars Special, General Delivery, at designated points of stop-over, always allowing sufficient time before arrival of train. At New Orleans, La., address c/o Hotel Roosevelt and at Havana c/o Hotel Plaza. This year we are having a club car attached to our train for the benefit of our guests.

As heretofore the "Eastern Regulars" trip is under the able direction of Mr. Frederic E. Bensen, of 50 Church Street, New York, to whom all communications should be sent.

Make your reservations now!



New Childs model 61-C triple combination car recently delivered to the fire department of Mechanicville, N. Y. The apparatus is mounted on a Childs Model 6 Fire Department Chassis. It has successfully passed all tests and been accepted and placed in service by the city.

New Pumper for Wichita Falls, Tex.—A new Seagrave pumper, the second received within a few months, has been unloaded in Wichita Falls, Tex.

Manchester Well Protected Against Fire

(*Continued from page* 556)

bells and a powerful compressed air whistle mounted on top of headquarters are connected to the secondary alarm circuits. Five street traffic signals at busy corners are controlled from headquarters and one street warning gong in West Manchester is operated from a fire station.

In transmitting alarms three rounds are sent out on fast time from the manual transmitter over the primary alarm and tapper circuits, and then three rounds at slower time over the secondary alarm circuits. The running card provides for response to 3 alarms and for covering in after second alarms. A fourth alarm in some districts and in other districts a third alarm acts as a general alarm and summons the entire department. On third alarms the private fire brigade of the Amoskeag Manufacturing Company, 12 men and a motor hose truck, responds.

In the fire stations where a ladder company and an engine company occupy the same building one captain commands both companies, assisted by two lieutenants.

The Water Supply System of Manchester

The water supply is furnished by a municipal water works; the first works, those of the low service were constructed in 1872; the high service plant was installed in 1893. The high service is sometimes used to augment the supply to the low service. The supply is pumped from Lake Massabesic at two stations, about 4 miles east of the city. One of the stations delivers to a distributing reservoir which supplies the low service. The other station delivers to the high service distribution system and to an equalizing reservoir.

Lake Massabesic has an area of 4 square miles and a total water-shed of 40 square miles. It furnishes an abundant supply which is also sufficient to supply water power for pumping from November to June. The elevation of the top of the dam is 147 feet and of the concrete wall topping of the dam is 149.5 feet, these being figures representing height above the city which in turn is at an elevation of 100.93 feet above mean sea level.

The following paragraphs briefly describing the pumping stations and hydrants are quoted from the latest report of the National Board of Fire Underwriters:

The low service pumping station was built in 1872 on Cohas Avenue, one mile west of the south end of the lake and 4 miles southeast of the principal mercantile district of the city. It is operated daily as required to supply the low service. The supply is diverted by a masonry dam, built in 1872 and topped with concrete in 1923, at the outlet of the lake, to a canal 1,500 feet long from which a 62 inch pen-stock of steel boiler plate extends 625 feet to a water turbine, and a 24 inch pipe to two centrifugal pumps, connecting to each through a short 12 inch gated branch. Water power is not used after the lake receeds to the level of the dam, elevation 147, and is generally available from November to June. Electric power is purchased from the Manchester Traction Light and Power Company and transmitted over an aerial circuit 5½ miles long. A transmission line between low and high service pumping stations provides for power from one station to the other. The discharge line from each pump is equipped with a gate and a check-valve and connects with a 24 inch cast iron force main laid in 1912 and extending 7,200 feet to the low service distributing reservoir where it discharges over a weir, so that in case of a break in the main, the reservoir would be drained only about 3½ feet below full stage.

The High Service Pumping Station

The high service pumping station was built in 1893 and 1901 near the north end of Lake Massabesic, about 3½ miles east of the principal mercantile district. The supply flows from the lake through 300 feet of 24 inch, cast-iron pipe to a suction well within the station. The outer end is 255 feet off shore and is fitted with upturned bell and copper screen 8 feet below the level of the dam. A reciprocating pump drafts from the well; two centrifugal pumps are primed from the force main and have a common system of suction piping, drafting directly from the well or through the condenser of the steam turbine. The discharge lines from each pump have a gate-valve and connect outside the station with a 20 inch cast-iron force main laid in 1893 which extends 19,200 feet to the high service reservoir, connecting to the distribution system of that service enroute and also, through a 20 inch valve normally closed, with the principal distributor of the low service.

Ordinary operation is the requisite time daily to supply the high service. During the water power season, the 5,000,000 gallon centrifugal pump is used with electric power from the low service pumping station; at other times the 6,000,000 gallon reciprocating pump and one boiler are used. With two boilers in service the steam turbine can produce about 500 k. w. which is sufficient to operate the 5,000,000 gallon high service pump and the 6,000,000 gallon pump at the low service pumping station.

The Reservoirs of the System

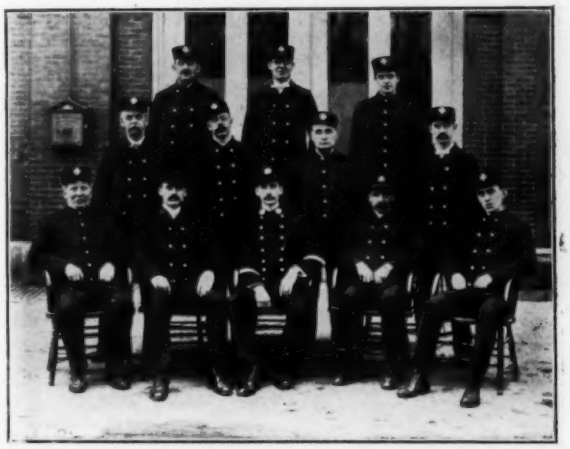
The low service reservoir, built in 1872 on Mammoth Road, between Island Pond Road and Cohas Avenue, 2½ miles southeast of the principal mercantile district, has a capacity of 18,000,000 gallons for depth of 20 feet; elevation of full line 261.5. Ordinarily storage ranges from 16,000,000 to 18,000,000 gallons. It is constructed of heavy earth embankments, with inside slopes paved with stone on concrete and floor of concrete. The force main from the low service pumping station enters over a weir; outlet is through a gate-house into a single 30 inch pipe. A 24 inch by-pass is provided.

The high service reservoir, built in 1893 on Oak Hill, 1½ miles northeast of the mercantile district, acts as an equalizer and distributor for the high service. The construction is masonry and concrete wall backed by earth embankment. The full line at elevation 398, depth 19.6 feet; capacity 4,000,000 gallons; the storage maintained rarely falls below 3,000,000 gallons.

Arrangement of Mains and Hydrants

Of the original installations of mains laid in 1872-3, which consisted of 27 miles of cement lined, wrought iron pipe, 8,400 feet of 20 inch in Lake Street and 45 feet in 6 inch connections to hydrants are still in use. Of the total mileage at present in service 28 percent has been laid since 1909 and 12 percent since 1915. For several years past, 6 inch has been the minimum size laid for hydrant supply.

On December 31, 1924, there were 1,055 hydrants in service, of Holyoke, Ludlow, Pratt and Cady, Smith, Boston Machine and Chapman makes. The Holyoke predominate and are used for new installations. All are of the post type with frost jackets, open clockwise, and have one 4¼ and two 2½ inch outlets. The newer installations have 5 inch foot valve and 6 inch barrel; the older, 4 inch and 5 inch, respectively. Connections are 6 inch. Nearly all on mains 12 inches and larger and some on 8 and 10 inch have gate in connection.



Old Time Group of Manchester Firemen, Taken when Chief French (Second from Left, First Row) was a Lieutenant

Those in the Picture: J. A. Steel, A. W. Tucker, S. M. Patten, E. W. Merrill, A. Firth, H. Barrett, C. H. French, Parsons, A. A. Puffen, and Klaubert.

The hydrants are usually set at the northwest corner of street intersections. The locations are determined by the water department and the requests of the fire chief are complied with. the hydrants have automatic drain valves and are installed with iron hood and loose gravel to facilitate drainage. Where drainage proves to be poor the hydrant is filled with wood alcohol in winter. Hydrants are inspected semi-annually and after use at fires. Troublesome hydrants receive special attention in winter, a steam boiler being provided for thawing. Hydrants are seldom found frozen when required for use at fires. Those used during the last National Board inspection were in good operative condition.

Protection of the Business Sections

In the center of the business sections the average area served by each hydrant is 50,000 square feet. In a representative residential district the average is 133,500 square feet. Of the 26 hydrants and 28 adjacent to the principal mercantile district, all

The population of Manchester is about 82,000 and it is an important manufacturing center. The ground is undulating with several steep grades. The city lies on both sides of the Merrimack River and covers an area of 33.9 square miles, about ⅔ of which is built upon. The chief articles manufactured are cotton and woolen products and knit goods, shoes, cigars, brushes, knitting machines, and needles. The city is on the main line of the Boston and Maine Railway route from Boston to Montreal.

Remarkable System of Charts Designed by Chief

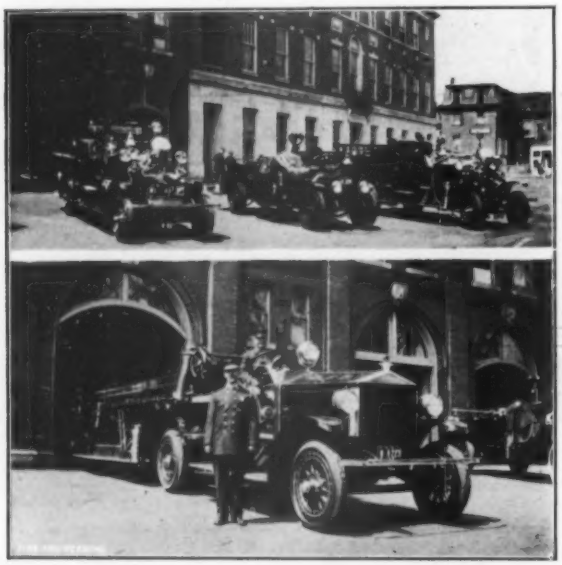
Chief French, of the Manchester Fire Department, with the aid of Capt. Tom Kellogg, chief clerk, has devised a remarkable system of charts showing the number of alarms received, valuation of property, per capita losses, company response, and other details. In the alarm record charts gray shading represents bell alarms, red denotes still alarms, and blue shows the total number of alarms answered.

The fire department band, which will be heard during the convention, is a splendid organization and one of which Chief French is justly proud.

Early Volunteer History Incomplete

The records of the volunteer fire department of early days in Manchester are meagre and incomplete and the annual reports now in existence do not go back further than the year 1879.

The following is a list of former Chief Engineers of the fire



Upper, Apparatus of Fire Headquarters, Engine 1, Hose 1 and Engine 4, Manchester Fire Department; Lower, Captain Albert W. Smith and Ladder 1

department and the time when they held office N. S. Bean, 1865-1866; Israel Dow, 1867-1868; Edward P. Richardson, 1869-1870; Benjamin C. Kendall, 1871-1875; James F. Pherson, 1876. Others who held the position of Chief Engineer were A. H. Lowell and Daniel Fling.

Ex-Chief Thomas Lane

Thomas W. Lane was elected chief engineer in 1879 and served as head of the department until July 1, 1917, when he retired and Deputy Chief Charles H. French was promoted to chief which position he has held from that date up to the present time.

Chief "Tom" Lane was one of the most famous and picturesque figures in the fire service. He was born in Wentworth, N. H., on May 20, 1841, and in 1843 his family moved to Hooksett, N. H., where he later attended school. He came to Manchester and for some time was connected with a newspaper, "The Mirror." He entered the fire department in April, 1864, as a call man. He then became a permanent fireman attached to Hose Company No. 1 where he served as clerk, assistant foreman, and foreman. In April of 1889 his friends presented him with a gold watch to record his 25th anniversary in the department. He was elected to the Board of Fire Engineers and made clerk of the board in 1877 and in 1879 he was appointed as chief engineer, or chief as it is now generally called. In 1890 he was nominated for mayor by the Republicans, but was defeated by a small margin. For many years Chief Lane drove a beautiful white horse which seemed to delight in rushing the chief's buggy to fires ahead of the other apparatus. The chief had a pet dog which accompanied him to fires and in later years occupied a seat in the chief's automobile while responding to alarms.

Chief Lane belonged to a great many societies and clubs and was Secretary of the Manchester lodge of Elks. He was a very popular official and a man who did much to improve the Manchester department. It is recalled that on one occasion the motorman of a Concord trolley car refused to stop when the fire alarm sounded and although the chief shouted at him the motorman continued to send the car along the main street ignoring the order to stop. Thereupon Chief Lane deliberately drove his buggy onto the track in front of the car and to avoid striking him the motorman was forced to stop. The matter was reported to the street railway officials. Chief Lane died on April 3, 1920. The old hand engine in East Manchester formerly called "Neptune" was renamed "The Thomas W. Lane" and this tub took part in many musters.

Equipment in 1879

In the year 1879 the Manchester Fire Department had four Amoskeag steam fire engines, two hose companies, and one ladder company, one hose sled, and one supply wagon, all the apparatus being horse drawn. At this time the companies bore the following names: Amoskeag Steam Fire Engine Company No. 1, located on Vine Street; Fire King Steam Fire Engine Company No. 2, located on Vine Street; E. W. Harrington Steam Fire Engine Company No. 3, located at Piscaaquog; N. S. Bean Steam Fire Engine Company No. 4, located on Vine Street; Pennacook Hose Company No. 1, located on Vine Street; Massabesic Hose Company No. 2, located on Maple Street; and Excelsior Hook and Ladder Company No. 1, located on Vine Street.

The famous Amoskeag steam fire engines, known all over the world for their efficiency and widely used in the fire service, were for years manufacturd in Manchester. They were made by the Manchester Locomotive Works under direction of N. S. Bean.

Fire Alarms in 1879

There were 22 alarms of fire in Manchester during the year 1879 with a total loss amounting to $32,233.81. The record of fires is interesting as it shows many of the same causes of fires as now. Defective chimneys seem to have been a prolific source of alarms.

Here is the list of alarms sounded in Manchester in the year 1879:

Thursday, Jan. 9—1:02 A.M., Box 5, fire in Towne's Block, corner of Elm and Amherst Streets; Loss, $1,758.81, insured for $1,733.81, cause cigar stub in wood closet.

Friday, Jan. 10—1:30 A.M., Box 26, fire in Chenette's blacksmith shop, corner of East High and Russell Streets; loss $125, fully insured, cause incendiary.

Friday, Jan. 17—11:30 A.M., Box 6, fire in building owned by George H. Hoyt at 133 Hanover Street; loss $100, no insurance, cause carelessness.

Wednesday, Feb. 19—5:40 P.M., Box 71, burning chimney, needless alarm.

Friday, Feb. 28—12:35 P.M., Box 24, fire at 464 Central Street in house owned and occupied by Charles E. Cutter; loss $2,800, insured for $2,000, cause defective chimney.

Saturday, April 12—8:10 P.M., Box 21, burning chimney at Patrick Burke's, 52 Merrimack Street, needless alarm.

Sunday, April 13—5:05 P.M., Box 71, fire in tenement house at 118 Spruce Street, owned by Mrs. F. L. Stark and occupied by Jeremiah Mahoney and Patrick Costello; loss $700, cause defective chimney.

Tuesday, April 22—4:20 P.M., Box 61, fire in Kimball and Gerrish's tannery situated in Bakersville about one and one half miles from central station; loss $13,000, insured for $9,000, cause supposed overheated drying room.

Monday, May 5—8:20 A.M., Box 7, boiling over of tar kettle on Lowell Street, near Chestnut, no damage.

Wednesday, May 21—1:45 A.M., Box 4, fire in building owned by Daniel Connor in rear of 601 Elm Street and occupied by Mrs. Sarah Shanley; loss $75, fully insured, cause kerosene lamp.

Thursday, May 29—6:30 P. M., Box 15, Bradford's Block, Elm Street, near bridge, oily waste in bureau; loss trifling, cause spontaneous combustion.

Thursday, August 7—12:50 A.M., Box 8, burning lime at Armory Mill; extinguished without aid from department.

Monday, Sept. 1—2:10 P.M., Box 4, fire in shed at corner of Spruce and Chestnut back street, owned by heirs of William Plumuer; loss $25, no insurance, cause incendiary.

Friday, Sept. 12—1:20 P.M., Box 51, fire in planing mill and box factory of S. C. Forsaith & Co.; loss $5,000, insured for $3,000, cause spontaneous combustion of fine coal.

Saturday, Oct. 4—7:20 A.M., Box 71, fire in barn of William F. Sleeper & Co. in rear of Park Street ward room; loss $300, patly insured, cause carelessness of boys with matches.

Wednesday, Oct. 22—7:55 P.M., Box 4, fire in planing mill and box factory of A. C. Wallace at lower end of Elm Street near gas works; loss $1,000, insured for $650, cause unknown.

Sunday, November 2—2:50 A.M., Box 24, fire in residence of Luther W. Hall on East Park Street (Hall's Hill) loss $6,000, no insurance, cause defective chimney.
Thursday, Nov. 20—1:55 A.M., Box 62, fire in house owned and occupied by Charles H. Colburn on Taylor Street, Hallsville; loss $1,400, partly insured, cause defective chimney.
Saturday, Nov. 22—10:30 A. M., Box 6, fire in bed at 448 Chestnut Street, occupied by Robert Costello, damage slight, cause matches.
Saturday, Nov. 22—7:25 P. M., Box 18, fire in house owned by the Misses Mary E. and eBlinda Dearborn at corner of Merrimack and Lincoln Streets and occupied by them and Charles F. Gardner; loss $550, insured for $350, cause defective chimney.
Thursday, Dec. 4—8:40 P. M., Box 7, fire in wood shed of Lowell Street school house; loss trifling, cause ashes in wooden box.
Saturday, Dec. 13, 11:30 A.M., Box 4, burning chimney in tenement owned by A. D. Gooden on Spruce Street.
Total gross loss for year, $32,233,81; insurance, $18,733.81; loss uncovered, $13,500.

Early Increases in Equipment

In April, 1888, the General Stark Steam Fire Engine was added to the department and located on Webster Street in the North End. A chemical engine was purchased the following year. In 1893 the Fulton Steam Fire Engine Company was established and an aerial ladder truck was purchased to replace the old truck of Excelsior Hook and Ladder Co., the old apparatus being assigned to Engine 3 station.

Engine Company No. 7, consisting of an Amoskeag steamer and hose wagon, was placed in service in 1907 and a city service hook and ladder truck was bought in 1911.

The First Motor Apparatus

The first piece of motor apparatus was purchased by the city on October 1, 1910. This was a Knox combination chemical and hose wagon which was called "The Flying Squadron" and placed in the Central Station in charge of Capt. Frank H. Harvey. Later it became known as "Squad A." Additional motor apparatus was purchased in 1912, 1913, 1914, 1916, and 1918, and the motorization of the department was completed in 1924.

Fire Fighting During Period 1879-1899

During the 20 year period from 1879 to 1899 there were a total of 751 bell and still alarms in Manchester, an average of about 37 alarms a year. The total gross loss in this time was $726,499.66 and the total net loss, deducting insurance paid, was $158,513.19. This makes a yearly average of only $7,952.66 net loss and the yearly gross average loss $36,322.48.

In the year 1883 there were only 13 alarms with total net loss of $1,260; there were 12 alarms in 1881 and a net loss of $2,570. In 1879 the net loss was $13,500 which amount was but once exceeded until 1891 when the North Weare Railroad Bridge was burned. The Kimball and Gerrish Tannery was burned the same year as the bridge. In 1880 there were 24 alarms for a total loss of $12,000.

The year 1881 had a small loss and the 30 alarms, more than the preceeding year, caused a net loss of only $2,570.

In 1882 there were 30 alarms and the net loss barely exceeded $4,500. In 1883 there were 13 alarms with gross total loss of $6,725.50 and net loss of only $1,260. In 1884 there were 30 alarms and the net loss went up in something more than direct proportion, being almost five times as great.

In 1885 the losses, with 7 more alarms than the preceeding year, again increased, the net geing $7,795. The total loss that year was a little more than $24,000. In 1886 the figures fell to $12,806 gross and $5,500 net. The next year the number of alarms was 50 of which 23 were still alarms. The total loss was $17,919 and the net loss $4,808. In 1888 the agregate losses went up to $33,-902.04 with paid insurance of but $19,182.23 which made a net loss $14,719.71. This year the Col. Benjamin C. Bean residence was burned with a loss of nearly $16,0000. In 1889 the number of alarms went up to 59, but the loss fell back to a net total of $2,414.62 as there was big insurance on the property damaged.

In 1890, in spite of 65 alarms, there was a total loss of but $16,533.28 with a net loss of $6,507. This was the year that the French Catholic Church of the St. Marie Society burned. The estimated loss on the church was about $10.000, so the losses on the other alarms were only about $6,000 or a little more.

In the year 1891 the loss amounted to $59,542.63, of which $16,315 was net. The Kimball clothing fire in the Weston, Hill & Fitts block, occurred this year with a loss of over $26,000 gross. The Manchester and North Weare bridge also burned with a loss of $24,000 and insurance of $10,000. In 1892 the number of alarms passed the 100 mark with a total loss of $116,-210.05, on which an insurance of $94,124.04 brought the net loss down to $22,086. The Varick fire on Elm Street caused the great loss, the damage in this alone amounting to nearly $100,000.

In 1893 there were 106 alarms with a total loss of $88,447.90 and a net loss of $17,043.32. The John Robie fire caused the heaviest loss this year, which loss was nearly half of the total loss for the year. The next year was one of small damages and net loss of only 5$11,268.44 with total of 136 alarms and but one second alarm. In 1895 there was a total loss of $40,000 and net loss of only $2,510.30. In 1896 the total loss fell to $24,000 with net loss of only $3,000, and the following year the figures were nearly the same. In 1898 the total losses jumped up over the $100,000 mark with but 16 per cent covered by insurance. There was a Varick fire this year and another in the dreaded flatiron district in McGregorville.

Some Later Big Fires in Manchester

The three largest fires in Manchester in recent years were the Kennard Block fire on January 14, 1902; the burning of the Merchants' Exchange Building on January 29, 1914; and the Varick Block Fire on June 24, 1924.

The Kennard Block was a handsome stone structure six stories in height and was considered one of the finest business blocks in the state of New Hampshire. It was occupied by stores on the ground floor and by offices in the upper stories. The blaze originated in the rear of Kimball and Allen's clothing store and spread with great rapidity. It was discovered about 10 o'clock in the evening while more than a score of people were in the building, some attending a meeting of the Board of Trade. All reached the street in safety. The Kennard Block was entirely destroyed, only tottering walls being left standing. The south end of Smyth's block adjoining was scorched and blackened and a big hole burned in the top. It was only after the hardest kind of a fight that the firemen saved this block and prevented what might have developed into a conflagration. Concord, N. H., sent a steam fire engine, hose carriage, and 24 firemen by special train in charge of Asst. Chief John J. McNulty. Nashua sent a steam engine, Hose Co. 4, and 20 men in charge of First Assistant Engineer J. E. Smith and these companies rendered valuable aid. The loss was estimated at $400,000.

The burning of the Merchants' Exchange took place on January 29, 1914. This building was situated in the heart of the retail shopping district on Elm Street, between Hanover and Manchester Streets. It was a four-story brick building occupied by the Merchants' National Bank, stores, and offices. The fire originated in the store of Leslie M. Folsom and was discovered at 4:24 a. m. The flames had obtained such tremendous headway that Chief Lane at once ordered a second alarm and shortly afterwards a third. Seven steam fire engines worked at the fire, including one from the Amoskeag Mill. Wagon guns and searchlights from automobiles were used to aid the firemen. Damage was estimated at $700,000.

The Varick Store Fire occured on June 24, 1914, and caused damage of $600,000. The flames broke out at 12:15 a. m. and a general alarm was soon sounded. The fire was one of the most spectacular in the city's history, paints and oils in the stock of the Varick hardware store feeding the blaze. Adjoining blocks were damaged and the fire was not under control until 7 a. m. A new gasoline pumper built for the Fore River Shipyard and in town for demonstration purposes worked four lines at the fire.

Manchester's Most Serious Fires

The following is a list of the most serious fires which have visited Manchester according to the existing records:

May 14, 1840—Amoskeag Island Mill destroyed.
August 12, 1844—Town house burned with loss of $30,000.
May 28, 1848—Two most ancient of Amoskeag Company's mills burned. Loss, $70,000.
March 16, 1850—No. 2 Mill, Stark, partly ruined. Loss, $30,000.
July 5, 1852—Baldwin & Co.'s steam mill on Manchester Street, between Union and Pine Streets, burned.
Sept. 22, 1853—Main building of Manchester Print Works burned. Loss $265,000.
July 15, 1855—No. 1 Mill, Manchester Print Works, burned with loss of $270,000.
Feb. 5, 1856—Patten's Block fire. Building ruined. Loss, $75,000.
June 3, 1857—Janesville mill of Baldwin & Co. destroyed. Charles Horr killed by falling walls.
Dec. 20, 1865—Greater part of State Industrial School burned.
March 1, 1867—Crain, Leland, and Moody Shoe factory at Amoskeag destroyed.
July 8, 1870—The famous "big fire" that swept area bounded by Elm, Chestnut, Hanover and back street between Merrimack and Manchester streets and caused damages amounting to $375,000.
June 26, 1882—Museum Block fire on Elm Street.
August 7, 1885—Webster Block fire. Several lives lost.
Oct. 17, 1890—St. Marie's Church destroyed.
May 14, 1890—Eliot Hospital fire. Mrs. Daniel Harriman burned to death.
Feb. 7, 1892—Big fire in store of the John B. Varick Co.
Feb. 18, 1892—Fire in St. Anselm's College.
Jan. 14, 1902—The Kennard Block destroyed with loss of $400,000.
March 4, 1905—Car barns of street railway destroyed.

April 8, 1909—Big fire in South End. Militia called out.
April 28, 1910—Odd Fellows' Block burned. Two killed. Loss, $125,000.
August 20, 1913—Serious fire at Manchester and Merrimack Streets.
Jan. 29, 1914—Merchants' Exchange destroyed with loss of nearly $700,000.
June 24, 1914—The Varick Block burned with loss of $600,000.

Companies and Officers of Department in 1926

The following is a list of Companies and Officers, Manchester Fire Department in 1926:

Engine Company No. 1, Vine St., Capt. Asa W. Gage, Lt. Frank E. Nute.
Engine Company No. 2, Main St., Capt. Clarence A. Whitcomb, Lt. F. M. Laraba.
Engine and Ladder Company No. 3, Lake Ave., Capt. Henry C. Crosby, Senior Lt. Herbert E. Dunbar, Junior Lt. John T. Duncan.
Engine Company No. 4, Vine St., Capt. William J. Arnold, Lt. E. H. Smith.
Engine and Ladder Company No. 5, Webster St., corner of Chestnut St., Capt. Irving S. Bryant, Senior Lt. Leon H. French, Junior Lt. Clarence F. Kemp.
Engine and Ladder Company No. 6, Rimmon St., corner Amory St., Capt. M. R. Maynard, Senior Lt. John W. Lyons, Junior Lt. Charles C. Caron.
Engine and Ladder Company No. 7, Somerville St., Capt. William L. Comire, Senior Lt. Peter J. Reilly, Junior Lt. Clarence Hackett.
Engine Company No. 8, Maple St., Capt. Harvey E. Harris, Lt. C. R. Hammond.
Hose Company No. 1, Vine St., Capt. Frank H. Harvey, Lt. Martin F. Kenney.
Hose Company No. 3, Elm St., Capt. James J. Collibs, Lt. F. P. Cleveland.
Hose Company, No. 4, Weston St., Capt. John J. Healy, Lt. L. D. H. Ford.
Ladder Company No. 1, Vine St., Capt. Albert W. Smith, Lt. H. G. Hall.
Ladder Company No. 8, South Main St., Capt. A. M. Tuson, Lt. C. H. Burhart.
Riverside Hose Company No. 5 (Volunteer), Front St., opposite Amoskeag St., Capt. Daniel Colby, Lt. William Robinson.
Massabesic Independent Hose Company, Candia Road, corner of Londonderry Turnpike, Capt. H. E. Magoon, Lt. Alfred Lallier.

PLANS COMPLETED FOR THE NEW ENGLAND CHIEFS' CONVENTION

Interesting Program Arranged for Visitors—Many Companies to Have Exhibits

CHIEF DANIEL E. JOHNSON, of Bridgeport, Conn., president of the New England Association of Fire Chiefs, and Secretary John W. O'Hearn, of Watertown, Mass., have completed elaborate plans for the holding of the fourth annual convention of the association in Manchester, N. H., on June 22, 23 and 24.

Chief Charles H. French, of Manchester, has prepared an attractive souvenir program for distribution to the delegates and has a large local committee hard at work making the final arrangements for the entertainment of the visitors who are expected to number close to a thousand.

Exhibit space in the New Hampshire State Armory has been at a premium for weeks and Chief Henry H. Heitman, of Waterbury, chairman of the exhibition committee, has been finding it difficult to accommodate all those desiring to engage display room.

The opening session of the convention will be held at 2:30 p. m. on Tuesday, June 22, in the ballroom of the Hotel Carpenter which will be official headquarters.

Charles W. Tobey, president of the New Hampshire State Senate, will deliver the address of welcome. Response will be made by Fire Commissioner Charles S. McCarthy, of Lewiston, Me.

Chief John M. Evans, of New Orleans, La., will attend the convention and deliver an address. Other prominent fire department officials who are expected to be present are: Chief John Kenlon, of New York City; Former Deputy Chief George A. Kuss, of New York City; Theodore A. Glynn, former Fire Commissioner of Boston; Ex-Chief Peter E. Walsh, of Boston; and former State Chemist Walter L. Wedger, of Massachusetts.

Immediately following the opening exercises there will be a memorial service conducted by the Rev. Ezra F. Ferris.

Speakers during the convention will include Col. William B. Burpee, of the New Hampshire Fire Insurance Company; Fred Shepperd, managing editor of FIRE ENGINEERING; Michael J. Healy, chief of the Manchester Police Department; John S. Caldwell, engineer of the New England Insurance Exchange;

(*Continued on page* 590)

NATIONAL FIREMEN'S ASSOCIATION HOLD CONVENTION IN CHICAGO

Endorse Fire Prevention Work of I. A. F. E.—To Fight Legislation Opposed to 2% Insurance Tax

AT the convention of the National Firemen's Association held in Chicago, Ill., on May 19 and 20, a resolution was adopted endorsing the fire prevention educational campaign carried on by the International Association of Fire Engineers. Since the major portion of the association's membership comes from the central states, this year's convention was held in the Great Northern Hotel in Chicago.

Many of the state firemen's organizations are affiliated with the national organization. The list includes the state groups of Minnesota, Michigan, Illinois, Indiana, Wisconsin, Virginia, Pennsylvania, New York, California, Connecticut State Fire Chiefs' Club. In addition there are associate and fire department memberships.

The most important topic that came up for discussion was the proposed legislation to abolish the 2% tax on insurance premiums for the benefit of the fire departments, pension and relief associations. Whenever legislation of this character is being introduced, the association will be pleased to be informed of the fact and will assist in organizing a concerted fight against the measure.

The following were elected officers for the coming year: James Crape, Chicago, Ill., president; Harold B. Nichols, Binghamton, N. Y., vice-president; Capt. J. E. Mersch, Evanston, Ill., secretary; Asst. Chief Edward Shearwood, Cincinnati, Ohio, treasurer; Chief H. H. Niemeyer, Portage, Wis., organizer; Simon Keilerman, Jr., Edwardsville, Ill., statistician.

N. Y. State Fire Chiefs Issue Program

The New York State Association of Fire Chiefs is to hold its twentieth annual convention at the Hotel Van Curler, Schenectady, N. Y., on June 16 to 18. This will also be the twenty-second anniversary of the association.

The program of the convention's sessions, issued by the secretary, Chief James H. Golden, Cohoes, N. Y., is as follows:

WEDNESDAY, JUNE 16TH

First Session, 10:00 A. M.—Hotel Van Curler

Opening of Convention, Chief E. J. Coyle, President, Lockport.
Welcome to State Fire Chiefs, Mayor A. T. Blessing, Schenectady, Introduced by Chief August Derra, Chief Schenectady Fire Department.
Response in Behalf of Members of the Association, Chief E. J. Coyle, Lockport.
Selection of Representatives to Report at Last Joint Session.
Reading of Minutes of Previous Meeting, Chief J. H. Golden, Secy-Treas., Cohoes.
Street Regulations Which Affect Fire Department Operations, W. Graham Cole, Safety Engineer, Metropolitan Life Insurance Company.
Putting Over Fire Prevention, Chief J. N. Sullivan, Utica.

Second Session, 2:00 P. M.—Hotel Van Curler

Association Interest, Chief John Kenlon, New York City.
Salvage Work in the Fire Department, Chief John Gibson, Mount Vernon.
Industrial Fire Protection, Thos. J. O'Connor, Chief General Electric Fire Department, Schenectady.

THURSDAY, JUNE 17TH

Third Session, 10:00 A. M.—Hotel Van Curler

Cooperation with the International Association of Fire Engineers, I. Herbert Case, Vice-President and General Manager of FIRE ENGINEERING, and Chairman Publicity and Membership Committee, International Assn. of Fire Engineers.
The Fire Brigade, I. A. F. E. Motion Picture, Chief James J. Mulcahy, Yonkers.
Fire Department Publicity, Wm. R. Capes, Secretary New York State Conference of Mayors and Other Municipal Officials.
Round Table Discussion—General Fire Topics.

Thursday, 2:00 P. M.

Exhibition by the Amdyco Company; Location to be Announced. Guest of Chief Derra and Schenectady Fire Department.

FRIDAY, JUNE 18TH

10:00 A. M.—Hotel Van Curler

Report of Secretary-Treasurer; Report of Standing Committee; Election of Officers; Adjournment.

Newcastle, Ind., Standardizes Couplings—The couplings of the fire hose and hydrants in Newcastle, Ind., have been standardized to conform to the National standard thread.

WITH THE EDITOR

The Tax Bill and the Fire Loss

It is not an extremely difficult matter to trace the relationship between the mounting tax bills of the various states and municipalities and the continually growing losses by fire. When it is considered that the national bonfire runs into half-billion dollar figures and that this must in the end come out of the pockets of the citizens, it is not hard to realize that this huge sum must result in increased state and city governmental expenses in an endeavor to stop or relieve such a terrible waste.

Such expenses in the machinery of govenment must, of necessity, be met by the people, and this takes the form of increased taxes by the state and the city.

One of the greatest items in this expenditure is naturally to be found in fire prevention; in other words, the cost of maintaining large fire departments and expensive apparatus and the installation and care of extensive water works.

It is a significant fact that while state and municipal taxes are ever on the increase, those levied for the uses of the National Government are declining. There can be no doubt that one of the principal causes for this state of affairs is the steadily increasing fire losses of the country. When one considers what this burden means for the various cities and towns it is not surprising to hear of the mounting tax bills under which the citizens are groaning.

There seems little prospect of relief until thorough education in fire prevention and legislation fixing personal liability for fires of careless origin is adopted. When citizens are compelled to bear the expense incident to the extinguishment of fires caused through their neglect or indifference, and compensate their neighbors for losses entertained thereby, there will, no doubt, be a substantial lessening in the huge national contribution to fire waste.

Making the Punishment Fit the Crime

There seems but little doubt that the only way to stop brush and forest fires, so often caused by carelessness and thoughtlessness, is to make a severe example of some of the offenders through a term in jail. Such extreme measures, while the necessity for them is to be deplored, would go a long way toward putting a stop to the practice—becoming more and more prevalent among young people parking in dark corners of the woods—of throwing lighted matches and cigarettes among the tinder-dry leaves and rubbish accumulated in dense undergrowth.

This act, so often repeated in spite of warnings and signs, is more fruitful, it is said by those who are experts in the care of forests and the prevention of forest fires, than any other cause, of the increasing number and extent of such fires and the destruction of valuable timber land.

If a bill recently introduced into the Massachusetts legislature becomes a law—and it is to be hoped that it will—a jail sentence will be meted out to the offenders in that state caught setting fires by flipping lighted matches, cigars or cigarettes into the roadside underbrush.

The bill is fathered by William A. L. Bazeley, Massachusetts commissioner of conservation, who asserts that the loss this year to the state through fires in its forests has exceeded $200,000. He charges that "The number of fires caused by automobile parties has about doubled this season," and he attributes much of this loss, in a considerable degree, to the increasing number of so-called "petting parties" parked in autos along the country roadside.

A salutary lesson to a few of these thoughtless offenders would do much toward instilling more care in the minds of others and thus would relieve the state of much unnecessary loss. If this experiment is tried successfully in Massachusetts it would be well for other states to follow her example.

What Next?

It's a mighty fine thing to get the youth of a city interested in the fire department and incidentally interested in fire prevention. A tremendous amount of good has been done in various municipalities through securing the co-operation of the boys in cleaning up the city. They have shown, under proper direction, a remarkable willingness to remedy dangerous fire conditions, and there are more than a few instances on record where a thorough clean-up of a town has been accomplished through utilizing the boys.

But the following story from a Salem, Mass., newspaper tells of an entirely new development:

BOYS RUNNING CITY OF SALEM

Left Fire Chief Behind in Run for Chimney Blaze

SALEM, May 1.—More than once mother stopped on her way to the store this morning when she heard young Johnnie holler, "Hi, ma!" as he whizzed by on the fire apparatus. It's Boys' Week here, and the lads in the High School are running various departments of the city government under the guiding hand of the department heads.

Everybody thought the idea a good one, and the city heads were glad to give the boys a little practical experience in handling city affairs, but little did Fire Chief Howard Kimball think that the reins of government would be taken from his hands so abruptly as they were this morning.

Shortly after 8 o'clock a still alarm summoned the appara-

tus to a chimney fire on Mason street. The boys showed at least, that they were alert and on the job, but Chief Kimball got fooled, if he had any idea that he would attend the fire in his own car.

The receiver had hardly been hung on the hook and the fire announced, when it seemed that boys sprang up from every point. All had one purpose in mind—get on the apparatus before it started. Ten of them clambered onto the engine and into the chief's car, and the chief was left behind.

By some feat of dexterity Deputy Chief James Koen managed to find some room in his car, and took charge of the fire-fighting forces on their arrival at Mason Street. The fire was put out in short order, and there was no lack of young fire-fighters to aid in extinguishing the blaze, and from time to time the department became augmented by groups of boys.

Fred Donovan, a football star, is acting as chief of the Fire Department, and Philip Worthy is his deputy. James Connelly is acting in the capacity of City Marshal and has charge of the police force of this city, and Francis Walk is doing traffic duty in the center of the city.

They are all watching for fires, and the citizens may rest assured that if a fire breaks out in their homes today, what the youthful department may lack in efficiency will be more than made up for in numbers.

There is lots to be said in favor of this innovation and a great deal against it. It will surely interest the boys more actively in the department—giving them these privileges; but isn't it taking an unnecessary chance?

The enthusiasm of youth must be thoroughly controlled, or it will go beyond all reasonable bounds.

Salem, above all cities, should be doubly chary about taking any chances as far as fires are concerned. The great conflagration a few years ago was a lesson which should not be readily forgotten.

It's a mighty fine idea to use the boys, but precautions must be observed that they be kept thoroughly in hand.

NEW YORK FIREMEN TO RECEIVE MEDALS FOR EXCEPTIONAL VALOR

To be Presented by Mayor Walker on June 22—List of Men and Heroic Deeds—Companies Winning Medals

FIRE COMMISSIONER JOHN J. DORMAN of New York having approved the findings of the Board of Merit of the New York Fire Department, has announced the names of the winners of medals for exceptional valor in the line of fire duty during the year 1925. The awards were made after consideration of over 150 acts of heroism by members of the department last year. Those selected for special citation were found to be exemplary.

The medals will be pinned on the heroes by Mayor James J. Walker, at 11:30 o'clock, Tuesday morning, June 22, at the City Hall.

Fireman William G. R. Mitchell of No. 66 Amsterdam avenue, a member of Engine Co. 18 will receive the James Gordon Bennett Medal for saving the lives of John O'Brien and Alexander Christopher at a fire in No. 533 West 27th Street.

For saving the life of a woman early in the morning fireman Francis D. Clancy and Capt. Ferdinand A. Beyer have been singled out for special heroism. Clancy will receive the Hugh Bonner Medal and Capt. Beyer the 'Brooklyn *Citizen*' Medal.

Fireman Richard Ryan of Hook and Ladder Co. 2, will receive the Trevor-Warren Medal for his rescue of Miss Sybil Skipton on the fourth floor of No. 10 West 49th Street.

Following an explosion in the cellar of No. 1416 Sixty-sixth street, Brooklyn, Battalion Chief David J. Oliver rescued Salvado Nuccio whom he found unconscious. He will receive the Thomas A. Kenny Memorial Medal. Oliver's name appears on the roll of merit eight times. This will be his fourth medal for extreme personal risk.

Fireman William H. Ulrich will receive the Van Heukelom Medal for his rescue of Miss Mary Nolan and Miss Nellie Sullivan from the fourth floor of No. 10 West 49th Street. Ulrich is a member of Hook and Ladder Co. 4.

At five o'clock in the morning a fire made Bernard Lassman unconscious in his apartment on the fifth floor. Fireman James H. Martin or Hook and Ladder Co. 3 ascended the stairway and carried him to the street. He will receive the Hurley Medal.

Fireman John G. Hutzelmann will receive the Thomas E. Crimmins Memorial Medal for the aid he gave to Acting Battalion Chief Isaac Ludgate and Capt. Rudolph J. Uster at a fire when both of them were overcome from fumes and gases. The cellar was partially filled with water and their collapse meant drowning. Hutzelmann sustained both of them, while calling for help. When other hands arrived and aided them to safety, Hutzelmann himself collapsed. He is a member of Engine 213.

A stubborn fire in the cellar of No. 90 Bowery became so dangerous, that Chief Kenlon ordered all firemen out of the building, for their own safety. When heads were counted, Battalion Chief James A. Quinn of the 2nd Battalion was missing. Fireman James S. Foster of Engine Co. 55 volunteered to find the missing chier. He searched the cellar under the most hazardous conditions and finally found the chief unconscious. Fireman Foster will receive the Henry D. Brookman Medal.

Fireman Percy H. A. Nixon of Hook & Ladder Co., 123 will receive the Prentice Medal for his rescue of Mrs. Mary Budini and her infant son from the kitchen of their home. He carried both mother and baby to safety.

Fireman Thomas C. J. Rooney will receive the Walter Scott Medal for saving Fireman Michael J. Fallon of Engine Co. 4 from drowning, at a fire on Pier 95. Fallon was thrown into the river when the hose line he was operating became unmanageable. Rodney jumped into the river and aided him.

Capt. James F. Roche will receive the Stephenson Medal for maintaining the best disciplined fire company during the year. Roche is the commanding officer of Hook and Ladder Co. 4. Roche has been a fireman twenty-three years and at times has been an Acting Battalion Chief. His father, the late James Roche, was a fireman for many years.

For efficiency in company evolutions and drills in the Fire College, the prize for 1925 goes to the officers and members of Engine Co. 39 in East 67th Street, where the drill school is located. This is the third time this company has won the prize. The personnel is as follows: Capt. Frederick C. Reich, Lieut. John J. McKough, Engineers of Steamer Richard A. Hughes and Peter F. Witte, Firemen Milton D. Adams, Robert A. Boyd, William Horan, Edmund G. McGann, William J. Walker, Joseph W. Allen, Frederick W. Fritz, John F. Gunner, Patrick Keany, William H. Schmidt and George P. Dwyer.

This prize winning company performed the twenty-two evolutions in the school in fifteen minutes and fifteen seconds. Its record in 1913 at which time it first won the prize was 24 minutes and 3 seconds. Then again in 1923 the same company won the prize with a record of sixteen minutes and 5 seconds.

The Board of Merit is composed of the following: Deputy Fire Commissioner Joseph M. Hannon, chairman; Deputy Fire Commissioner William F. Thompson; Fire Chief John Kenlon; Assistant Fire Chief Joseph B. Martin; Deputy Chiefs, John O'Hara, Thomas R. Langford, James W. Heffernan, Patrick Maher and John F. King. Daniel D. Gallagher is secretary to the board.

Portland, Me. Fire Headquarters

(Left to Right) Ladder 5, (85 ft. Aerial Ladder); Ladder 1 American-LaFrance City Service Truck); Engine 1, (1,000 gal. Seagrave Pumper); Engine 5 (750-gal. American-LaFrance); Chemical 1, (Mack Combination); Squad and Chemical Equipped with three 40-gal. Tanks.

QUESTIONS AND ANSWERS

Conducted by FRED SHEPPERD, B. Sc., M. E.

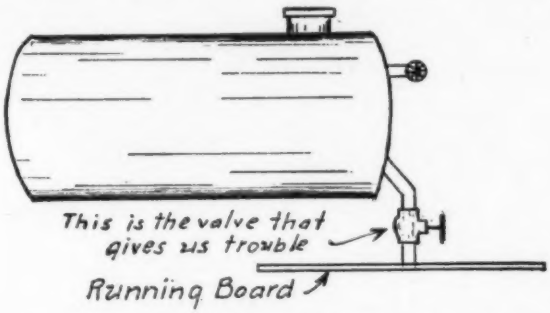
"He that questioneth much shall learn much"—BACON

NOTE—Readers of FIRE ENGINEERING are invited to send in questions, which will be answered in the order received. Names are omitted from questions unless otherwise specified.

Leaky Chemical Tank Valves

To the Editor:

We have two forty-gallon chemical tanks on our chemical truck. These tanks are equipped with one (1) inch globe valves and which (especially the drain valve on each tank) are always dripping on the floor. The valves are of brass body, brass stem and a brass seat fitting loosely on end of stem. We grind the seats of these valves which makes them hold until we use the tanks, after which time they drip and have to be ground again. Please advise us what kind of a valve



would answer our purpose? Would it be a valve with a rubber disc seat? Sketch of tanks is given herewith.

Yours truly,
M. M. R.
April 24, 1926.

Answer: In order to minimize the trouble from leaky drain valves, the use of an angle or blow-off valve employing a disc faced with leather or some other composition such as the Jenkins' disc will no doubt fill your needs satisfactorily. Valves faced with leather have been found to give good service under these same conditions, but we should expect that a valve similar to the Jenkins' valve would perform equally as well.

Motorizing a Hand Pump

To the Editor:

If possible, will you furnish me with estimated cost, and outline by rough sketches and description, for converting an "old time" hand drawn and operated 2 cylinder piston type fire engine into a power operated machine.

What I mean is that the old hand operated 2 cylinder piston type fire engine (the engine pump proper) be removed from its old chassis and mounted on an up-to-date truck chassis or automobile. Motor of said power vehicle to furnish the power to drive or operate said fire engine or pump, which may be done through a set of suitable gears, or another type of drive such as a combination of gears, chain, sprocket and walking beam.

Just what I mean by estimated cost is for removing pump and fittings from old chassis and mounting it on a motor driven chassis, so that the motor of said power vehicle can be utilized to operate the pump, not taking the power vehicle into consideration.

I am a member of the local fire department, Engineer of one of our rotary pumpers and a reader of "FIRE ENGINEERING."

Your early reply will be appreciated.

Yours truly,
W. W. J.

Answer: The above problem is indeed an interesting one, but, at the same time a puzzling one.

These old pumps which were built for slow motion operation may not serve at all where high speed, high power motors are to drive them.

In view of their limited capacity, and comparatively light construction we would not recommend powering them with a gasoline engine.

We are inclined to believe that such a combination would not make a machine that would stand up and as a result your company would be continually repairing or replacing parts of the apparatus.

It may be possible to connect up one of the light gasoline engines such as are used in driving portable forest fire fighting pumps through a proper chain of gears, to give a good substitute for a chemical engine stream, but beyond this we do not believe it would be safe practice.

As to the cost of such work we could not even hazard a guess. So many factors enter into consideration that any conjecture made would be worthless.

"False" and "True" Questions

Continuation of a series of "False" and "True" Questions given in a recent examination for the grade of lieutenant in the San Francisco Fire Department, and the answers thereto, from the last issue of FIRE ENGINEERING:

Question: 21. True, False. If the officer in charge of an engine company responds to a still alarm in an apartment house where the fire is in two rooms on the fifth floor, he should lead the line of hose from the nearest hydrant up and over the fire escape to the fifth floor fire escape balcony, and take the line to the seat of the fire through the window.

Question: 22. True, False. At a fire in a lumber mill shaving and sawdust bin, where there is considerable smoke, flame, and slight dust explosions, an abundance of water should be obtained at once and then all of the contents of the bin should be removed and thoroughly wet down with small lines to finally extinguish the blaze.

Question: 23. True, False. In a case of emergency at a fire on the water front opposite the Fire Boat manifolds you can connect two lines to the manifolds and lead into the fire.

Question: 24. True, False. After placing the ladders to the windows and roof of a building on fire the apparatus of the truck should be stationed at the street curb of the sidewalk directly in front of the building on fire.

Question: 25. True, False. On the roof of a five (5) story building a three (3) way should be placed in service from the stand pipe outlets on the roof and the three (3) way stream should be directed to the fire which has control of the adjoining building.

Question: 26. True, False. For a fire in the gas meter room of an apartment house the gas supply should be shut off immediately from the meters by shutting the valve in the gas service supply which is located in a fire proof-box in the sidewalk near the curb line and the remainder of the fire should be extinguished by the use of chemical fluids.

Question: 27. True, False. A monitor battery mounted on a combination wagon is used to combat dangerous spreading fires such as fires in lumber yards and lumber mills, and it can be handled by one man operating the powerful stream of water at his desire.

Question: 28. True, False. If there is a fire quite near the barrels of unslacked lime in a warehouse, an abundance of water should be used to extinguish the fire.

Question: 29. True, False. While working at a serious fire in a glass manufacturing plant, close to the glass furnaces, orders should be issued to be extremely careful in the use of water and under no circumstances to play the stream into the glass furnace.

Question: 30. True, False. In order to successfully cope with a fire in a subbasement, you should connect your circulator to the siamese connection at the floor level.

Question: 31. True, False. To save a woman who is at a first story window she should be told to jump from the window into a life net held by four men.

Question: 32. True, False. A fifty foot ladder should be placed to reach the roof of five-story buildings and the ridge ladder should be used as a brace ladder.

Question: 33. True, False. A ceiling hook should be used to rip open the ceiling wherein a fire is concealed.

Question: 34. True, False. If the small brass spanner is lost enroute to a fire a monkey wrench should be used to open and turn on the water from a twin hydrant.

Question: 35. True, False. With men and hose and a 24-foot ladder, you are on the top of a six-story building separated by a 10-foot alley from a six-story building that is on fire. Instead of backing down to the street the ladder should be used as an emergency bridge from building to the other to convey the men and hose across.

Question: 36. True, False. Foamite is very effective in extinguishing all oil fires.

Question: 37. True, False. At a drug store fire you should immediately dump both tanks of the chemical engine at the same time and proceed to the seat of fire.

Question: 38. True, False. Wool that has been afire requires careful watching because it holds fire.

Question: 39. True, False. At a fire if necessary, two company lines, where both lines ended with female couplings, should be connected together with the aid of a double male connection.

Question: 40. True, False. To an alarm of fire in Chinatown three fire companies should respond equipped with triple combination apparatus.

Question: 41. True, False. When the ventilation of an entire building is necessary, in addition to other measures taken, the windows should be pulled all the way down from the top.

Question: 42. True, False. When the ventilation of only one room is necessary the top window sashes should be pulled down three-quarters or one-half of the way and the bottom sashes should be pushed up until both sashes are even.

(NOTE: *The remaining questions and the answers to them will be continued in subsequent issues of* FIRE ENGINEERING—EDITOR.)

Answer: Due to local conditions, and local practices, in some cases it has been found necessary to qualify the answers as given. In answering these questions on examination, however, no such qualification should be included. The question should be answered either false or true, and no comments added. Some of the questions, which are purely of a local nature, have not been answered as no information is at hand to make an intelligent answer possible.

21. True. 22. True.

23. True. This question is answered "True" on the assumption that the fireboat manifolds used in your city are not equipped with clapper valves, but have control valves for shutting off and turning on the water. In this case lines can be connected to the manifold without double male connections, or if they are not fitted with male nipples then double males will have to be used in connecting the lines to the manifolds.

This answer infers that there is already pressure on the high pressure system to which the manifolds are attached.

24. False.

25. True. This answer is given on the assumption that three-way connections are available and are used in your department. The advantage of using a three-way connection is that it gives three lines of hose leading up to a large nozzle, reducing the friction loss from the standpipe to the large nozzle.

26. True. 28. False.
27. True. 29. True.

30. This question is vague. It apparently refers to a practice employed in using siamese lines for operation of circulator in your local department. No answer is therefore ventured.

31. False.
32. False. 33. True.

34. True. This answer is given on the assumption that you use the usual pentagonal nut (five sided) and in such case where the nut is not worn, an ordinary monkey wrench will serve satisfactorily. A Stilson wrench would serve better.

35. True. 38. True.
36. True. 39. True.
37. False.

40. False. This answer is given on the basis of your assignment of apparatus for high value or congested districts. In this case you run with three engine companies and three to five hose carriers, two ladder companies and one chemical truck company.

However, no data being available as to the location or nature of your "Chinatown" this answer might best be checked up with your assignment cards.

41. True. 42. True.

Portland, Ore., Graduates Firemen—Having completed a ten months course of instruction, sixty-four firemen of Portland, Ore., received diplomas indicative of their graduation from the fire school. The graduates were addressed by Mayor Baker and Commissioner Bigelow.

Chief Elling, Toledo, Not to Retire

A report circulated by a Toledo daily paper that Chief Louis Elling was about to retire from the fire department of that city has been emphatically denied by Chief Elling in a communication to FIRE ENGINEERING, in which he says: "Replying to yours of the 26th, will state that I have no intention of leaving the fire service at this time."

Rumors of disagreemen between the chief and Safety Director Hill of Toledo, were also denied by the director in a newspaper interview.

Chief Elling has been a member of the Toledo Fire Department for forty-seven years, and in his connection as chief has established a record for high efficiency in the department.

Chief Louis H. Elling
Fire Department, Toledo, Ohio

Chief Herring Active in Fire Work

Chief Albert Herring of Murphysboro, Ill., has been following up the various conventions held in Illinois in order to have the associations pass resolutions pledging their support to the fire prevention campaign inaugurated by the International Association of Fire Engineers. He has secured the cooperation of the farm bureau agent for southern Illinois in order to educate the farmer in the value of fire prevention methods. The introduction of the gasoline operated farm machines has brought an added hazard to the farm.

New Station Erected in Tampa, Fla.

A new fire station of Spanish design and complete with drill tower, has been erected in Tampa, Fla., at a cost of $30,000. The building was officially opened with appropriate ceremonies by Chief Bolton and members of the department. Officially it is known as station No. 5 The drill tower is sixty feet high

Station No. 5 Erected in Tampa, Fla.

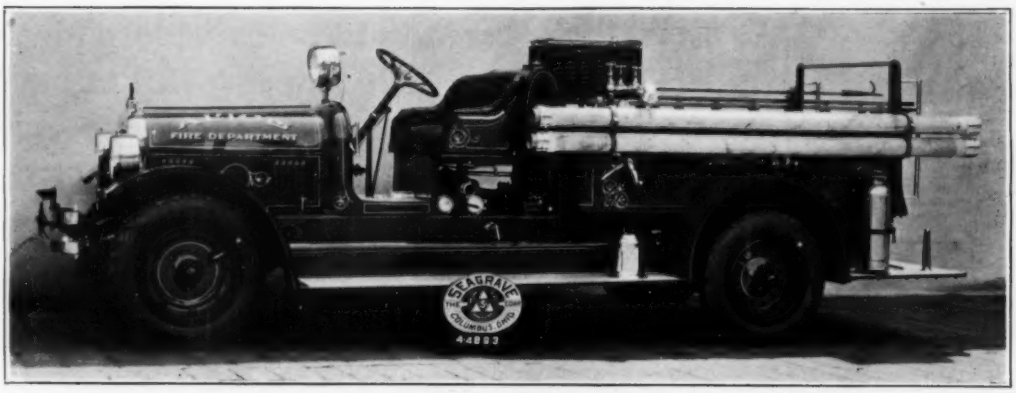
and will be used to train department rookies in the art of raising ladders, the use of scaling ladders and other firemanic work.

The first floor has space for two pieces of fire apparatus. The addition at the rear houses a machine shop, a fire alarm room, and storage space. On the second floor is one large dormitory. The building was designed by Frank Dunham, architect of Tampa.

T. F. MAGNER.

Yonkers Selects Site for Fire Station—A site has been selected in Yonkers, N. Y., for the construction of a new fire station to replace the one on Palisade avenue.

The Seagrave Suburbanite



A speedy, light-weight apparatus that meets the urgent need of suburban villages, small towns, and the residential districts of cities for adequate fire protection.

Made as only Seagrave know how to make fire apparatus — fine materials, skillful workmanship and steadfast service are assured by the name

SEAGRAVE

THE SEAGRAVE CORPORATION

Columbus, Ohio, and Branch Offices at

Boston, Mass.
New Haven, Conn.
Philadelphia, Pa.
Chicago, Ill.
Dallas, Texas
Seattle, Wash.
Kansas City, Mo.
Pittsburgh, Pa.
Birmingham, Ala.
Los Angeles, Calif.
San Francisco, Calif.

Power and Speed insure greater Work Capacity

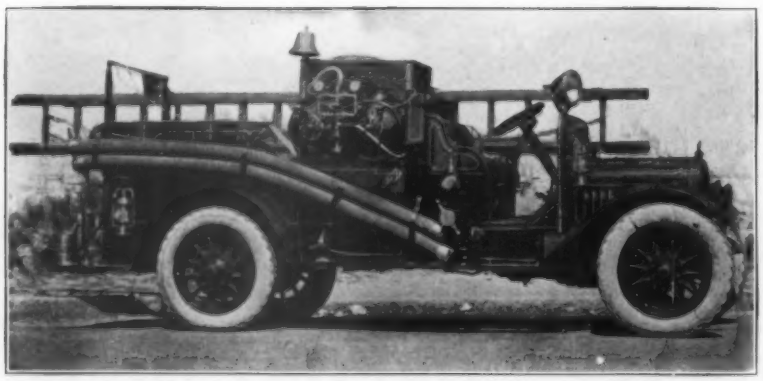
GMC TRUCKS
PRODUCT OF GENERAL MOTORS

In the purchase of a motor truck, *Work Capacity* will be considered first. Your truck must be powerful enough to handle its loads on the steep hills and in heavy going, without sacrificing the speed that governs its earnings.

Every GMC model; from the 1 ton to the 15 ton Big Brute Tractor-Truck; is powered with an engine of greater than average capacity. Yet GMC full pressure lubrication and the dual cooling system make speed possible and safe.

In the Big Brute heavy duty models, tremendous reserve power is provided through the GMC 53 horse power Engine and the famous GMC Two-Range Transmission, without uneconomical "over-powering" or sacrificing one iota of speed.

The engineering and manufacturing standards attained by General Motors make this exceptional GMC work capacity possible—*with economy.*



Matthew T. Long, Asst. Fire Chief of Rockford. Ills., wired us as follows: "Have used the GMC the past 2 years covering the factory and business district, as well as the residence, and have found it satisfactory and well suited to the work."

Sold and Serviced Everywhere by Branches, Distributors and Dealers of

GENERAL MOTORS TRUCK COMPANY, Pontiac, Michigan

A DIVISION OF YELLOW TRUCK AND COACH MANUFACTURING COMPANY

GMC 1, 1½ and 2½ ton trucks — GMC Big Brute 3½ and 5 ton trucks — GMC Big Brute 4 to 15 ton Tractor Trucks
Yellow Cabs — Yellow Coaches — Yellow Light Delivery Trucks — Hertz Drivurself Cars

FIVE BUILDINGS INVOLVED IN FIRE AT NATIONAL CAPITAL

One Fireman Badly Injured and Four Others Hurt in Big Washington Blaze Which Gutted Three Buildings

ONE fireman badly injured, four others hurt, the narrow escape from suffocation of a whole family, the wrecking of three buildings with two others involved and a loss totalling nearly a hundred thousand dollars was the toll of a recent big fire in Washington, D. C. The fire brok out in the rear of Liggett's drug store, at 904 F Street, the first alarm being received at 4:58 a. m. It quickly spread laterally to the stores of Mertz & Mertz and the Columbia Optical Company, which were in buildings adjoining on the west and to the Washington Loan and Trust Company's building to the east. The blaze

Courtesy Washington Times.

Washington Firemen Tackling Big Blaze in Which Three Buildings were Wrecked

also rapidly spread upward, and when the first alarm companies arrived fire was bursting through the roof of the Liggett building, in the rear.

The second alarm brought Deputy and Acting Chief A. J. Sullivan, in command, and viewing the seriousness of the situation, he at once turned in three more in quick succession. This brought into action all but eight companies of the entire department, there being 250 men and 16 Seagrave and American-LaFrance triple combination cars at work.

There were plenty of hydrants available, spaced 200 feet apart, with a pressure of 45 pounds. The water supply was from a 30-inch main, and 20 engine streams were thrown, the nozzles used being 1¼ and 2 inch. In all, some 7,500 feet of cotton, rubber lined hose was laid, four lengths of this bursting during the fire-fighting. The department used also one turret pipe, with a 1½-inch tip.

The worst injured of the firemen was struck by falling bricks and suffered a fractured skull. A Greek family residing above the drug store were rescued, nearly overcome by smoke, by a policeman. An elderly man was also rescued in the early moments of the fire before the firemen arrived by a citizen.

The fire already had a good start when the first companies arrived, and the firemen were compelled to hoist ladders on the Ninth Street side of the Washington Loan and Trust building and the smaller building adjoining on Ninth Street to attack the rear of the burning drug store. It was while fighting the fire from this place that the injured fireman was struck by falling bricks.

The buildings involved in the fire were situated in the Northwest business district of the Capital, and one was nine stories in height, the other four buildings being three stories. The fire burned eleven hours before it was extinguished. The loss on buildings was $47,500, and on contents, $38,950.

Firemen Rescue Cow from Ditch.—When the firemen of Wakefield, Mass., responded to an alarm they found a cow wallowing in an icy ditch. The cow was rescued with a block and tackle. The farmer explained that he didn't know what to do so he called the fire department.

PARKED AUTOS AND TRAFFIC JAMS HINDER PITTSBURGH FIREMEN

Large Fire in Business District of Pittsburgh Calls for Four Alarms—Torn Up Streets Also Interfere with Apparatus

WHILE Pittsburgh fire fighters were hampered in their work by traffic jams, parked automobiles and torn up streets in the vicinity of the fire to which they were called on May 8, they made a hard but successful fight in controlling and extinguishing one of the quickest and most spectacular night fires that has visited the downtown business district for a long while. Flames, starting from some unknown but mysterious cause, swept through the seven floors of an eight-story business block located at 810-812-814-816 Penn Avenue in the wholesale clothing, dry goods and furniture district of the downtown business section of the city on Saturday evening, May 8, causing damage by smoke and water to adjoining structures and for a time threatening to sweep the entire block between Eighth and Ninth Streets.

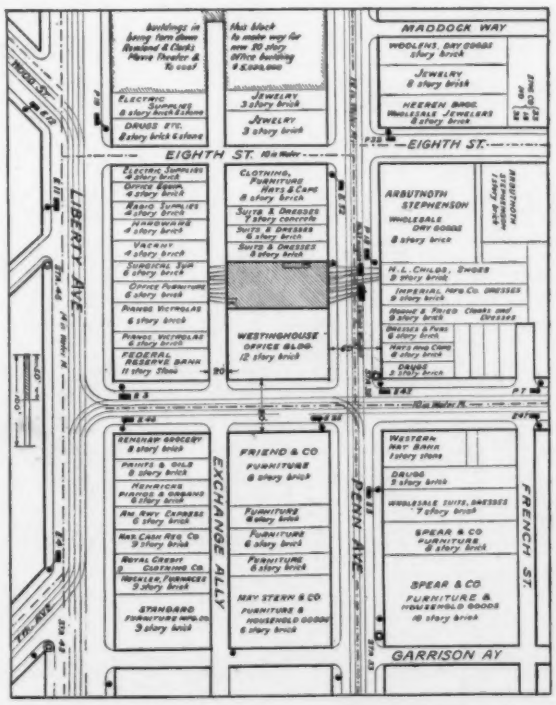
The fire was discovered shortly after 8 o'clock, eastern standard time, by a passing pedestrian who turned in the first alarm from Station 32 located a half block from the burning building.

By the time Engine Companies No. 18, 32 and 33 located on Eighth Street below Penn Avenue, just around the corner from the burning building, (three of the eight Engine and Truck Companies designated to answer the first alarm) reached the scene of the fire, the flames had already gained great headway, the windows on the second floor in the front of the building were cracking from the heat, the entire second floor being involved, the flames roaring up the stairway and passenger elevator shaft in the front of the building to all of the upper floors of the structure.

The three fire companies fought their way into the building from Penn Avenue and attempted to pass up the stairway to head the fire off but were driven back and out of the building by the headway of the flames.

Acting Battalion Chief Michael J. Brown quickly sent in the second alarm from Station 32. Four alarms were sent in for the fire in the short period of twelve minutes, calling to the scene seventeen engine companies, three truck companies and one water tower company, the chief of department, deputy chief and three battalion chiefs.

Engine Company No. 33 one of the Eighth Street fire companies returning to their company quarters after answering a



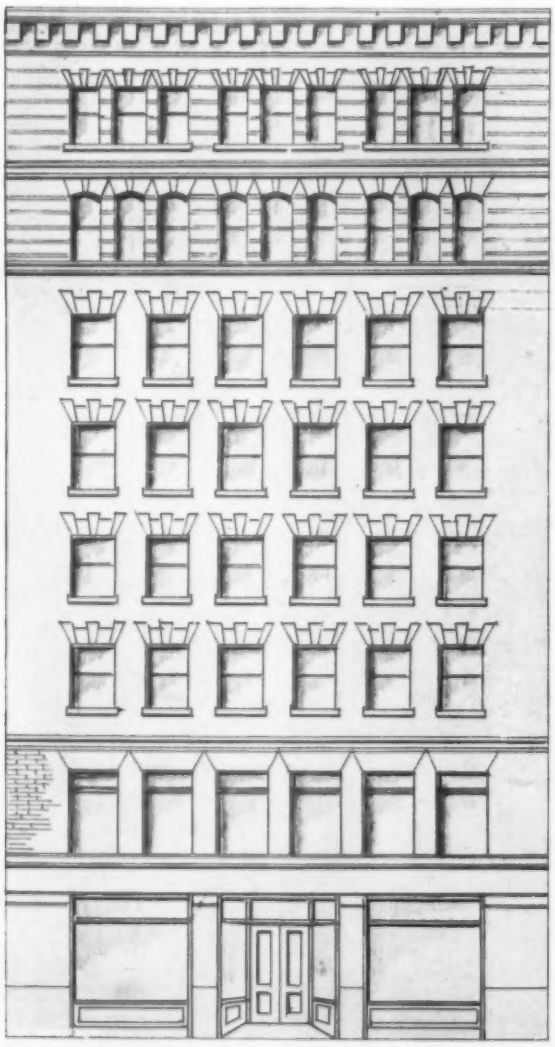
Map of District Surrounding Large Pittsburgh Fire, Showing Lay Out of Apparatus, Etc. Burned Building is Shaded. Drawn by Wm. E. Patterson.

"still alarm" passed the burning building just a few minutes before the outbreak of the fire and noticed no signs of fire in the building as they passed. They were just backing their apparatus into quarters when the first alarm came in from Station 32.

After the fourth alarm transfers were made, three engine companies and one truck company were in quarters to protect the downtown business district and the outlaying districts were properly covered up.

The fire starting early Saturday evening when the downtown streets were crowded with thousands of people and hundreds of automobiles hindered the fire department to a great extent in getting to the fire and into service upon their arrival. The automobiles parked on Penn Avenue and surrounding streets made it impossible to get the water tower into service in front of the burning building. Parked automobiles opposite the burning building hindered the firemen from placing the deluge combination water tower and turrett wagon in a position where it would render the most efficient service with its high powered streams. Chief Smith on his way to the fire from his home answering on the second alarm, had to go a round-about way in order to reach the fire, owing to the traffic congestion on the main thoroughfares.

A total of 154 uniformed firemen were on duty at the fire, consisting of the following classifications: Chief of department, one deputy chief, one battalion chief, two acting battalion chiefs, six captains, three acting captains, seven senior lieutenants, three junior lieutenants, five pumpmen, nine enginemen, nine assistant enginemen, thirteen drivers, ten chief's aides, three fuel wagon drivers and eighty-one hosemen and laddermen.



Front Elevation of Eight Story Brick Building Destroyed by Fire in Pittsburgh. Drawn by Wm. E. Patterson.

A plentiful supply of Ludlow fire hydrants with single and double 4½-inch openings, three and four hydrants being located at street crossings and two and three hydrants located in the middle of the blocks, with pressures on hydrants, ranging from 90 to 110 pounds connected to ten and twelve-inch water mains, which are cross connected to large volume mains from the Highland Park twin reservoirs gave the firemen all the water they required in controlling and extinguishing the fire.

In extinguishing the fire, thirty-three effective pumper and engine streams were used including powerful high-pressure streams from two three-way siamese deluge sets, three powerful turrett streams, one water tower stream and one rail pipe stream, 1,100 feet of 3-inch hose, 11,750 feet of 2½-inch hose and 600 feet of one-inch lead line hose, all cotton rubber lined and 146 feet of ladders.

Nine powerful high-pressure streams poured tons of water into the burning building from Penn Avenue. The deluge combination water tower and turrett wagon of Engine Company No. 1 was connected up on Penn Avenue with six lines of hose. A 1¾-inch tip was used on the water tower nozzle and a 1 7/16-inch tip was used on each of the two turrett nozzles, these three streams delivering approximately 2,500 gallons of water per minute into the burning building.

Two three-way siamese deluge sets placed into service on the seventh floor of the Childs Building, directly opposite the burning building on Penn Avenue, one with a 1¾-inch tip and the other with a 1⅜-inch tip and two other single streams, one located on the sixth floor and the other on the eighth floor of the Childs Building did most effective and efficient service, these powerful streams driving the fire back on the upper floors and keeping them confined within the burning building.

In addition to the above, a powerful turrett stream, pressure being furnished through three lines of hose and a powerful rail pipe stream, on No. 32 wagon, pressure being furnished through two lines of hose was in service in front of the building on Penn Avenue.

In the rear of the burning building in Exchange Alley, the fire was fought with a number of effective fire streams from the upper floors and the rear fire escapes of buildings facing on Liberty Avenue.

James Wilson, a negro, employed by the jewelry firm as a watchman in the building is being held for investigation by the fire department and police officials after making conflicting statements about the fire. Upon the arrival of the first fire companies he was seen running out of the burning building and in his haste to get out, he almost ran into Acting Battalion Chief Michael Brown. Men working in the Westinghouse offices next door to the burned building stated to fire department officials that they had smelled a strong odor of gasoline which filled the neighborhood for quite a while before the fire broke out.

Twenty-eight pieces of fire apparatus, all motor driven and tractor drawn were in service at the fire.

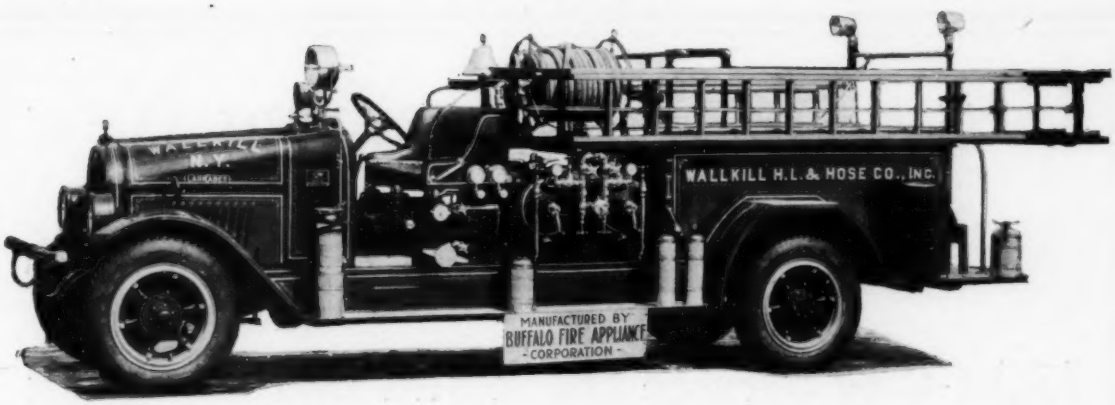
The burned building fronting fifty feet on Penn Avenue and extending through the block to Exchange Alley a distance of one hundred and twenty-five feet was of modern mill construction, eight stories high with basement, a stairway and a passenger elevator in the front part of the building and a freight elevator in the extreme rear end of the building. The floors were carried on heavy oak beams supported with iron columns. Iron shutters protected all window openings in the rear of the building. There were no partitions of any kind on the different floors all floors being open throughout the building. The building had a modern constructed fire escape which led to all floors and the roof from Exchange Alley but had no sprinkler system or private fire protection of any kind.

The building at the time of the fire was vacant with the exception of the second floor which was occupied by Friedman Brothers, wholesale jewelers, who were just taking possession of the entire structure for their business.

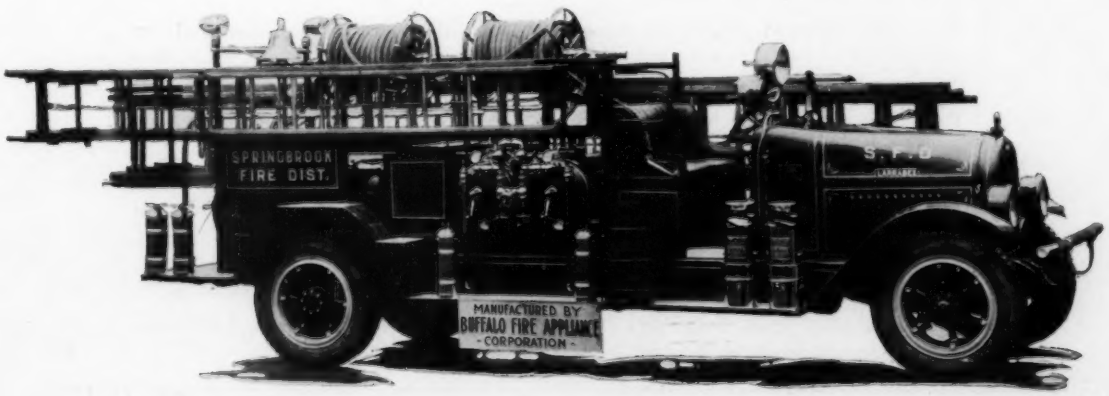
Not one section of hose burst during the entire progress of the fire. The duration of the fire was six hours and forty-nine minutes, being struck out at 3:08 Sunday morning by Acting Battalion Chief Michael J. Brown.

Sioux City, Ia., Has Busy Month—April was a busy month for the fire department in Sioux City, Ia. Chief Kellog reports that the department answered 136 calls.

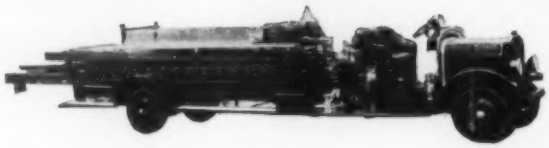
Claims Apparatus Has Radio Receiving Powers.—A Seagrave fire apparatus which was delivered to Wichita Falls, Texas, is claimed by the firemen to have the power to pick out sound waves from the air and to make them audible. When one of the firemen placed his ear against a length of hard section hose attached to the pumper, he distinctly heard a piano selection, and several members of the fire department claim that they too heard selections of popular music being played. You can take this story at face value or not.



It is worth remembering that small towns and suburban and rural communities are more and more turning to Buffalo apparatus to meet their fire protection requirements. There are good reasons for this. Buffalo equipment is built to your order to meet your own particular needs, is high quality fire apparatus at a reasonable cost, is fully guaranteed to do the work for which designed, is making-good and making friends wherever in service, is designed by experienced fire apparatus engineers, is built by skilled workmen in a new modern factory and is constructed of the finest materials money can buy. Would you like further information? Then write the Buffalo Fire Appliance Corp., Main office and factory, Buffalo, N. Y.



Fire Chiefs — Something New



Light City Service Hook and Ladder Truck

Double Bank type—Ladders mounted low guaranteeing quick and convenient removal.

Complete Ladder Service With 50 ft. as longest ladder. Price moderate—affords same protection as Apparatus costing considerably more.

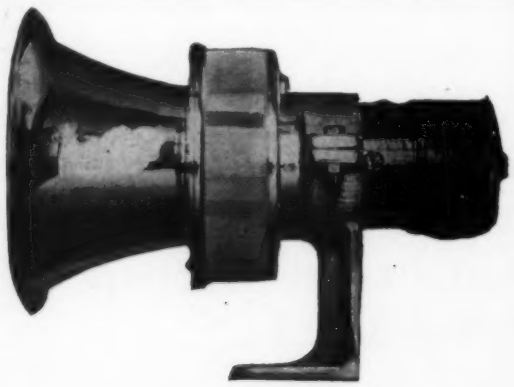
If interested, write us for information.

Combination Ladder Co., Inc.

381 Fountain Street, Providence, R. I.

C.A.M. Sirens

are better sirens



They are designed solely for emergency signalling and are unsurpassed for ruggedness of construction, simplicity and accessibility of parts.

They are built to give service and to endure.

Bronze is used where bronze serves best; likewise with other metals.

C. A. M. Sirens may well be classed as aristocrats in the siren field. They are "quality" sirens.

If you are in the market for the best that can be built in the way of electric fire apparatus sirens, get in touch with us. Write for bulletins.

C. A. M. Manufacturing Company

802 Humboldt Bank Building **San Francisco, California**

WHAT'S BURNING

From reports covering the United States and Canada, the estimated losses by fire during the week ending May 21, 1926, aggregated $5,044,000, as compared with $5,282,200 for the corresponding week in 1925. The total is derived by adding to the amount in the list given, which includes only those of $25,000 loss and over a sum equal to thirty per cent of that amount, statistics showing that the smaller fires average about that proportion of the larger. Losses for the week ending May 28, follow in their right order.

The figures published in this list, compiled from telegraphic reports of fires occurring during the weeks, are based on estimates made at the time, which are necessarily hurried and are subject to latter investigation and consequent correction. Taken as a whole, however, they give an approximately correct view of the losses incurred. The figures represent loss in thousands.

KANKAKEE, ILL.—Property of Kankakee Pure Milk Company. 30
LAKEVILLE, IND.—Wolke-Schafer elevator destroyed..... 40
MEMPHIS, TENN.—Building occupied by Denaux Company.. 30
WAUSAU, WISC.—Plant of Hammer-Blow Tool Company destroyed, Marathon Motor Car Co. property damaged..... 125
SMACKOVER, ARK.—Plant of Henry H. Cross Company destroyed 60
LONG BEACH, CAL.—Property of Long Beach Packing Company 60
HUNTINGTON, CAL.—Lloyd L. King—Ford Agency..... 30
KANSAS CITY, MO.—Hanger No. 1 of U. S. Army, Richards' Field 80
OTTAWA, ONT.—Homestead of H. Bradish Billings, Russel Road 40
TYRONE, PA.—Templeton Building in business section..... 200
ANDERSON, S. C.—Boys' High School destroyed..... 100
ILLIOPOLIS, ILL.—Community High School Building destroyed 80
CHERRY CREEK, N. Y.—Farm buildings owned by Herman Mount 25
GRAFTON, W. VA.—Factory building owned by L. A. White.. 25
HONESDALE, PA.—Two barns with contents, owned by D. J. Witherspoon 25
METCALF, ILL.—Pat Breen's general store destroyed..... 30
PATERSON, N. J.—Carriage shop of Peter Dowling, adjoining property also 65
WATERVLIET, N. Y.—Seven houses destroyed..... 25
AUBURNDALE, MASS.—Wood working plant of J. W. Ferguson & Co..... 25
THOMASVILLE, GA.—Thomasville Variety Works..... 40
DUNMORE, PA.—Quinn Washery destroyed..... 45
PICAYUNE, MISS.—Goodyear Lellow Pine Company..... 300
SELKIRK, MAN. CANADA—Plant of Manitoba Steel Foundries. 250
CANTON, MD.—Plants of Griffith & Boyd, Summers Fertilizers Company, Baltimore Copper Smelting Company and Central Chemical Company, also surrounding structures.....1,250
VERDI, NEV.—Lumber Mill of Verdi Lumber Company destroyed 150
EVANSVILLE, IND.—Business block destroyed..... 80
LISTIE, PA.—Business section damaged..... 50

From reports covering the United States and Canada, the estimated losses by fire in the week ended May 28, 1926, aggregated $4,004,000, as compared with $4,542,000 for the corresponding week in 1925. Losses for the week ending June 4, follow in their right order.

LITTLE FALLS, MINN.—700 tons of wood pulp of the Itasca Paper Company destroyed..... 25
SHAMOKIN, PA.—J. J. Newberry Company building destroyed. 60
NORLINA, N. C.—Two business establishments..... 25
EVANSTON, ILL.—Memorial Hall at Northwestern University. 60
SAN FRANCISCO, CAL.—Packing plant of Cudahy Company.. 160
LAMB, MICH.—Property of Michael Shanahan destroyed..... 25
IRON MOUNTAIN, MINN.—Stock of Standard Clothing Store.. 25
ALTA PASS, N. C.—Alta Pass Inn destroyed..... 120
MONTREAL, QUEBEC.—Eastern Abattoirs, Ltd., and United Products, Ltd., plants damaged..... 25
MARION, WIS.—High School destroyed..... 30
ASHLAND, WIS.—Three buildings and two automobiles destroyed 25
SPARKMAN, ARK.—Shed and contents of Sparkman Lumber Company 40
MARCUS, IOWA.—Evangelical Lutheran Church destroyed.... 25
BAYONNE, N. J.—The Casino, owned by Hermeneau and Rogow 60
BATAVIA, N. Y.—N. Y. Central R. R. Switch Tower..... 40
ATLANTIC CITY, N. J.—Fred. Packers Shop, Clement's Book Store 70
BALTIMORE, MD.—Plant of Atlantic Rubber Company, Highlandtown 40
ST. MARYS, PA.—Builders & Manufacturers Supply Company plant 45
BRUIN, PA.—Plant of Butler County Oil Company..... 60
FAIRFAX, S. D.—Fairfax Milling Company..... 25
KOKOMO, IND.—Kokomo Steel & Wire Company..... 200
MERIDIAN, MISS.—Warehouse and two dwellings of Universal Motor Co. 25
AUGUSTA, WISC.—Augusta Creamery Company Plant destroyed 25
SHREVEPORT, LA.—Shreveport Packing Company plant destroyed 25
OCALA, FLA.—Citrus Exchange Packing House, Knight & Lange Warehouse and Ocala Motor Company..... 60
WESTPHALIA, IND.—Tiple at mine of Knox Consolidated Coal Company 40
BIRMINGHAM, IOWA.—Four business houses destroyed..... 30
PEABODY, MASS.—Tannery of Littlefield Regal Leather Company 40
BERMIDJI, MINN.—Four buildings destroyed..... 40
MENTOR, OHIO.—The Hart Residence owned by G. W. Cottrell 40
WALLINGFORD, CONN.—Holy Trinity Catholic Church..... 25
DONNELLSON, ILL.—Six business establishments destroyed.. 25
WEST UNION, ILL.—Five business houses destroyed..... 60
STRASBURG, OHIO—Buildings for Garber Lumber Company.. 40
MASONTOWN, PA.—Nine business houses destroyed..... 75
CANTON, MISS.—1,200 bales of cotton and section of Federal Warehouse & Compress Company destroyed..... 90
NORTH TAUNTON, MASS.—Three ice houses of Courcy Brothers on Sabbatia Lake destroyed..... 25
LUZERNE, N. Y.—Eleven buildings on Wayside Inn property.. 25
EAST ROCHESTER, N. Y.—Pyramid Press Company..... 75
JERSEY CITY, N. J.—Row of frame houses—76-82 Palisade Avenue..... 50
ELMIRA, N. Y.—Baker Brothers' Printing Plant..... 80
MEMPHIS, TENN.—Jolly Motor Livery Corp. and E. C. Denaux, Inc. 40
SPRINGFIELD, ILL.—Boston store gutted..... 120
FRAMINGHAM, MASS.—Park building, Concord Street..... 100
LINCOLN, NEB.—Business building owned by John Rohrig.... 25
STATE COLLEGE, PA.—Commercial garage of G. M. Nerhood destroyed 25
BRISTON, VA.—Johnson City Sale Brick Corporation plant... 120
CLAFLIN, KANS.—Bloomer Garage and Implement Store destroyed. 40
CAMBRIDGE, MD.—Box and canning factory of Phillips Canning Co. 200
WINDHAM, MONT.—Windam Mercantile Store and adjoining property..... 40
BILOXI, MISS.—Business block in Howard Avenue destroyed... 80
ELIZABETH, N. J.—Furniture store of J. Flusser & Company.. 40
HARTFORD, CONN.—Edwin P. Taylor Lumber Company..... 170

From reports covering the United States and Canada, the estimated losses by fire in the week ended June 4, 1926, aggregated $5,850,000, as compared with $8,002,500 for the corresponding week in 1925.

SAN FRANCISCO, CALIF.—Plant of Rayal Tallow & Soap Company 80
PHILIPPI, W. VA.—Opera House and adjoining property..... 125
E. ST. LOUIS, ILL.—Business district fire..... 150
TAMPA, FLA.—Small shops and several residences..... 150
TARPON SPRINGS, FLA.—Enchantment Inn destroyed..... 40
JOHNSON CITY, TENN.—Tennessee Brick Company plant destroyed 150
SUTTON, MASS.—Perry Brothers Dairy barn destroyed..... 30
LINCOLN, NEBR.—Shogo Lithia Springs Company Building.. 25
EAST ORWELL, OHIO.—P & O Electric Plant..... 60
LYNDEN, WASH.—Imperial Fir Lumber Company sawmill.... 50
CHICAGO, ILL.—Building at 23 E. Jackson Blvd. and adjoining property..... 40
NEW ORLEANS, LA.—Warehouse of the Rebecca Company... 170
TUSCALOOSA, ALA.—Plant of Black Warrior Duco Company.. 25
MONTGOMERY, ALA.—Plant of the Auto Block Manufacturing Company 60
Forest Products Company 40
JULIETTE, GA.—Juliette Milling Company Plant destroyed... 125
SALINA, KANS.—Bloomer garage and implement store destroyed. 80
LANCASTER, KY.—Mechanical department of Bailey-Elliott Company 25
PURVIS, MISS.—Six business establishments destroyed..... 25
CLEMSON COLLEGE, S. C.—Engineering building of Clemson College 270
BLACKSTONE, VA.—Three business houses destroyed..... 25
SHEFFIELD, ALA.—Main business block gutted 25
WINNIPEG, MAN. CANADA—Warehouse on Bonnatyne Avenue 120
WINDHAM, MONT.—Mercantile store, bank building and barber shop. 45
FRESNO, CALIF.—Packing plant of Joaquin Valley Meat Company 60
FLORENCE, COLO.—Two tanks of the United Oil Company destroyed 80
ELY, MINN.—Exchange Hotel destroyed, owned by Ike Cox 50
MONTREAL, QUEBEC.—Manufacturing plant of Louis Beaudry & Son 25
RODEO, CALIF.—Property of the Banner Oil Company..... 65
NEW CASTLE, PA.—Edenburg Flour Mill on Mahoning River 150
UNIONTOWN, PA.—Sawmill and contents, owned by Dr. C. H. Sherry 40
LESLIE, ARK.—Four business houses gutted..... 25
LOUISVILLE, KY.—Offices and storage plant of Bond Brothers 40
PAYNE, OHIO—Brady Brothers elevator and warehouse destroyed 25
MEYERSDALE, PA.—Shoe store and apartment building, Main Street 80
STE. URSULE, QUEBEC—Store of J. H. Brisebois destroyed... 35
DALLAS, TEXAS—The Costner & Lohr establishments..... 25
BENTON, ARK.—Five one-story business buildings..... 25
LOWELL, MASS.—A. G. Pollard Store and Masonic Temple.... 800
LOUISVILLE, KY.—Bakery of George Horn, Story & Ohio Avenues 40
BOYERTOWN, PA.—Boyertown Burial Casket Company.....1,000

Salvage Corps Formed at Dallas

Assistant Chief E. N. Bartley and Captain M. E. McCarthy of the Dallas, Tex., fire department completed a two weeks' course of instruction in the salvage corps at St. Louis, Mo., preparatory to establishing a corps in Dallas. These two officers will be in command of the two shifts of the corps.

The Dallas officers returned with a large amount of equipment which will be used in connection with the salvage corps work. While in St. Louis, they responded to a number of fires and obtained first hand information on the operation of a large salvage corps.

Old Hand Tub Saves Burning Home.—An old hand tub which only was displayed as a relic of old time fire apparatus, was used to save a burning home in Massachusetts. Three wells were pumped dry by the ancient fire appliance.

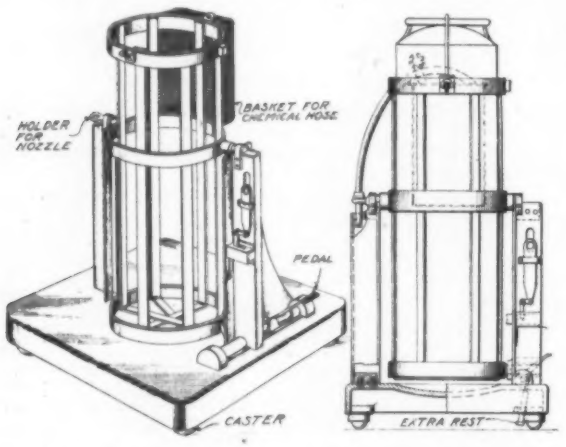
Recent Patents

Descriptions of Patents Recently Issued of Interest to Fire Departments—Fire Extinguisher Appliance—Battery-Charging System

Fire-Extinguisher Appliance

An application for a patent has been made by W. M. Newton of Dover, Dela., for a device which it is believed will facilitate the handling of three-gallon chemical fire extinguishers of the inversion type by people of limited strength.

It consists of a heavy base on which are mounted rollers or casters. Two uprights are securely fastened to this base, and between them on a swinging axis is suspended a metal container into which the extinguisher is placed and locked. The container



is normally held in an upright position by a latch mounted on one of the standards to which a foot lever is geared.

In operation, the carriage is wheeled into position and the foot lever is depressed. This action withdraws the latch permitting the container to revolve on the horizontal axis and at the same time it brings two rubber tipped feet into contact with the floor to prevent the base from sliding when inverted. The container is caught and held by another latch until released by a hand lever located on the side of the standard. The apparatus is practically fool proof—one end of the axis is elongated and is formed into an eye in which the nozzle must be placed. The nozzle forms a lock which prevents the extinguisher from rotating on the horizontal axis unless the nozzle is withdrawn and held in the hand of the operator. This will prevent accidental turning.

A metal basket is arranged on the back of the container into which up to twenty feet of standard hose can be coiled; when the container is inverted, this hose is dumped on the floor ready for use.

This design is particularly adapted for theatres and semi-public buildings where larger extinguishers may be handled with ease by one person.

The illustration at the left is a perspective of the design; at the right is a front elevation of the appliance.

Automatic Battery-Charging System

A patent (No. 1,574,747) has been granted to Charles Auth of New York for his design of an automatic battery charging system which will automatically maintain the batteries at a constant voltage. Embodied in this design is the precautionary measures for abnormal circuit conditions.

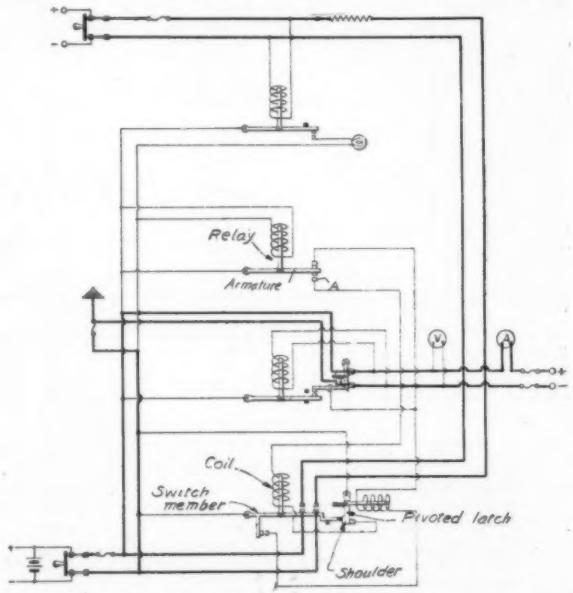
In this design, the switch member which cuts in and out the power circuit, is locked or held in position to such an extent that it will not vibrate or flutter under minor voltage fluctuations. There are three circuits, the power circuit, the battery circuit and the service circuit.

When the voltage of the battery falls to a predetermined point, a switch member is actuated to close the circuit between certain conductors. In the present instance, the switch member is moved to closed position by a coil which is energized when the voltage of the battery drops. A relay is shunted across two conductors so that when the voltage of the battery drops the armature of the relay which is connected by a wire to the relay will fall into engagement with the contact "A" which is in circuit with the coil. At the same time the coil is connected to the remaining battery conductor with the result that the switch member is held in closed position so long as the armature engages the contact "A" in charging the batteries.

An increase in the battery voltage will break the contact and will not necessarily permit the switch member to fall to the open position, due to the locking device which is provided to hold the switch closed. In the case shown, the lock is patterned after the pivoted latch with a shoulder adapted to underlie the end of the switch member, when the latter is in a closed position.

When the voltage of the battery has been raised to a sufficient point, the latch is withdrawn from the switch and the armature is elevated. Rapid vibration of the switch member is prevented once the charging operation has commenced.

Current flows from the batteries through conductors to the service conductors which are grounded in this instance. The inventor prefers to arrange the system so that in the event of



abnormally high voltage in the service circuit, the latter as well as the charging circuit will be automatically opened.

The system may also include a signal or alarm to indicate the failure of voltage in the charging circuit; the alarm may consist of a light or other means of notification.

Tests to Be Made on Fire Apparatus

A series of indoor and outdoor demonstrations illustrating the uses and effectiveness of standard fire equipment and modern methods of fire control for railroad properties will be conducted at the plant of the Foamite-Childs Corporation at Utica, N. Y., on Monday, June 14. Invitations have been sent out to those interested in fire protection and safety work.

The program which has been arranged for the day, follows:

10:30 A. M. Guests assemble in Italian Room, Hotel Utica.

10:45 A. M. Fifteen Minute Talks on the Scientific Aspects of Fire Control.

"What Constitutes a Complete Fire Protection Service for Railroads?", Chandler P. Smith, E. E.

"The Why and Wherefore of Chemical Fire Appliances," Addison O. Boniface, B. S.

"The Inside Story of Standard Extinguishers," Clifford B. White, M. E.

"Froth or Foam," James A. Harte, B. S.

"Latest Developments in First Aid Protection," Frank R. Davis, President, Davis Emergency Equipment Company, Inc.

12:00 M. General Discussion: Questions and Answers.

(*Continued on page* 590)

DARLING

A Better Gate Valve

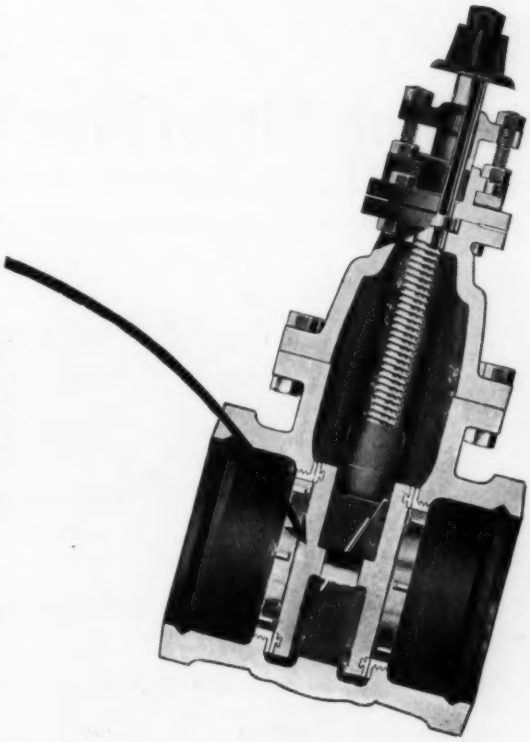
Stays Tight — Easily Operated — Long Wearing

The Ground Faces Free From Injury

The construction of the Darling Gate Valve is such that the Ground Faces are free from injury and undue wear as the Valve is being closed or opened.

In closing the Valve the Discs descend free and clear of the Seats until the Lower Wedge reaches the boss in the bottom of the Case and the Discs then being in front of the Seats, further downward movement of the Upper Wedge forces the Discs squarely against their Seats. In opening the Valve the first turn of the Stem withdraws the Upper Wedge from contact with the Lower Wedge, instantly releasing both Discs from their Seats before they start to rise.

This is but one of five major features which make Darling Gate Valves so desirable.



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Its heavy growl, rising in pitch to a shrill shriek, can never be drowned out or mistaken for other sounds. Its message of danger is far-reaching and commands quick action.

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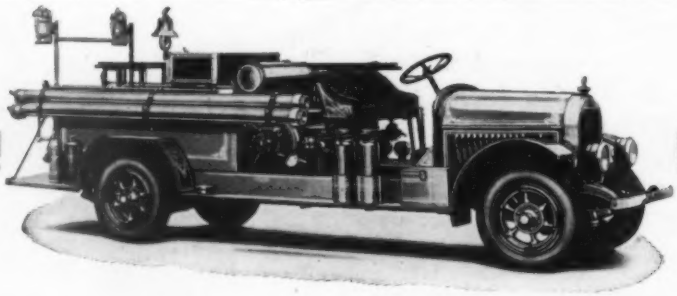

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The American-LaFrance Fire Engine Co., Inc., offers the new Cosmopolitan as fire protection to the smaller community with a justified feeling of pride.

The six cylinder motor is speedy and powerful. The pump is the famous American-LaFrance rotary gear type readily adaptable to the varying requirements of fire service.

Smaller communities needing efficient fire protection will welcome the Cosmopolitan. Let us send you illustrated literature.

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INDUSTRIAL PLANT PROTECTION

Keeping the Plant Brigade in Shape

By J. M. KLIPFEL,

Chief Engineer of Plant and Chief of Fire Department, Rochester, N. Y., Works, Vacuum Oil Company

Just as a workman is known by his tools, and this is no more true than in the fire department, it becomes necessary not only to possess them but to keep them in good serviceable condition. A good motto to follow is: "Nothing is too good for fire service and nothing but the best will do." In the Rochester Works the duties of the Fire Marshall include the testing of various equipment periodically, the keeping of records of all fires and equipment that is used and the inspection of all buildings and yards as to fire hazards and appliances.

Chief J. M. Klipfel

The importance of his work becomes apparent at a fire drill or fire when many pieces of equipment may be called into play that have not been used for months or even years.

As time is an all important factor and delay of five or ten seconds may mean thousands of dollars, it is obvious that recruits be given a thorough training so they become familiar and get accustomed to team work.

The period required to teach recruits the rudiments is usually two weeks—two drills per week. The picture, Number 1, shows, a "green" squad getting their first lesson in hose connections. Number 2 shows a fire company answering an alarm. The helmets and coats are kept on the doors, giving the men plenty of room in which to put them on. The fire alarm directory is a fixture over the doors. Spike stops prevent the doors from blowing shut. Number 3 shows the proper method of connecting a hose to hydrant. The end of the hose is wrapped around the hydrant, the man standing on the hose while connecting to the spud. This is to prevent the hose being pulled away while the car automatically unreels the hose in being pulled towards the fire. The other man at the hydrant is attaching a gate to the opposite spud. Number 4 shows the breaking of a hose to connect nozzle and holder which are completely assembled and attached and to a short length. All hose connections can be undone and made by hand so they will not leak if the couplings are oiled and fitted with perfect gaskets. Spanners are very seldom used at Rochester. (See page 582 for illustrations.)

A speed test during the last summer showed that one man could lay four lengths or 200 feet of two and one-half inch hose, connect to hydrant, connect to nozzle, turn on hydrant, and turn on nozzle without leaks, in from seven to eight minutes. The Fire Marshall, who probably makes more connections in one month than an ordinary fireman makes in two years, made the enviable record of doing the test perfectly in five minutes and ten seconds.

Carrying hose up a ladder is not such a hard job if done as shown in Number 5. The leader strap being used by the second man is hung on the rung just above the roof to prevent kinking the hose and to hold the loaded hose from pulling the hose and men off the roof. Other firemen with axes would follow to assist the hose men when necessary.

The difficulty of getting water or other extinguishing material to the seat of a fire is overcome by a fireman fitted out as shown in Number 6. The man is fitted with an all service gas mask to prevent being overcome by smoke and gases. The helmet is the stiff regulation type to prevent any injury to the head and the heavy axe is used for cutting openings for hose streams. The stunt of removing a bursted hose without shutting off the water is shown in Number 7. This saves a great deal of time and prevents holding up other operations, especially when a high pressure stream has burst throwing water in all directions.

Number 8 shows a comparison of hose streams, operated with 125 pounds and 45 pounds water pressure. The 45 pound stream is by no means a failure. It will break through a small window pane easily at a distance of 60 feet. It should be noted that one man is handling the 125 pound stream without difficulty.

A good fire fighter knows that his first duty is to rescue imperilled occupants by whatever means are most available, such as fire escapes, stairs or elevators or ladders.

Number 9 shows a fireman carrying a comrade down a ladder. The injured man is slung over the right shoulder of the rescuer who places his right arm through the legs and holds the injured man firmly at the wrist of his right arm which is placed over the left shoulder of the man making the rescue. This leaves the left arm of the rescuer free to hold on to the ladder.

No fire brigade should be without a rescue squad and revival equipment. In Rochester a hand cart is used, as shown in Number 10, to carry a regulation army stretcher, inhalator and gas masks which should be of types approved for the various purposes for which they are to be used. The gas masks are brought to the scene of the fire by the rescue squad, they being placed in a centrally located point in the Works, along with the other equipment.

In order to be prepared to fight a fire successfully, the officers, as well as the men, should have a clear knowledge of conditions in and around buildings. They must know the hazards of locations which present a bad situation from the fire fighting standpoint as well as the layouts of buildings and materials of construction.

Without massed fire drills, one of which is shown in Number 11, fire fighting becomes guesswork and work in general, haphazard, with the result that the men are working blindly getting into many pitfalls that are dangerous and positively unnecessary.

Aside from recruit, test, and company drills, massed drills are held once a month at Rochester Works, the time and place being designated by the Fire Chief or Superintendent of the Works, on the spur of the moment. Illustrations shown on page 582.

Bridgeport Captain Dies

The Bridgeport, Conn., fire department lost one of its most efficient fire fighters on May 8 when Captain Michael J. Dailey of Truck Company No. 1 of that city died in St. Vincent's hospital following the amputation of his left leg just below the knee. Captain Dailey, the oldest captain in the service at Bridgeport, was injured on May 4 when he was hurled from the platform of the aerial truck while the apparatus was responding to an alarm in the west end section of the city.

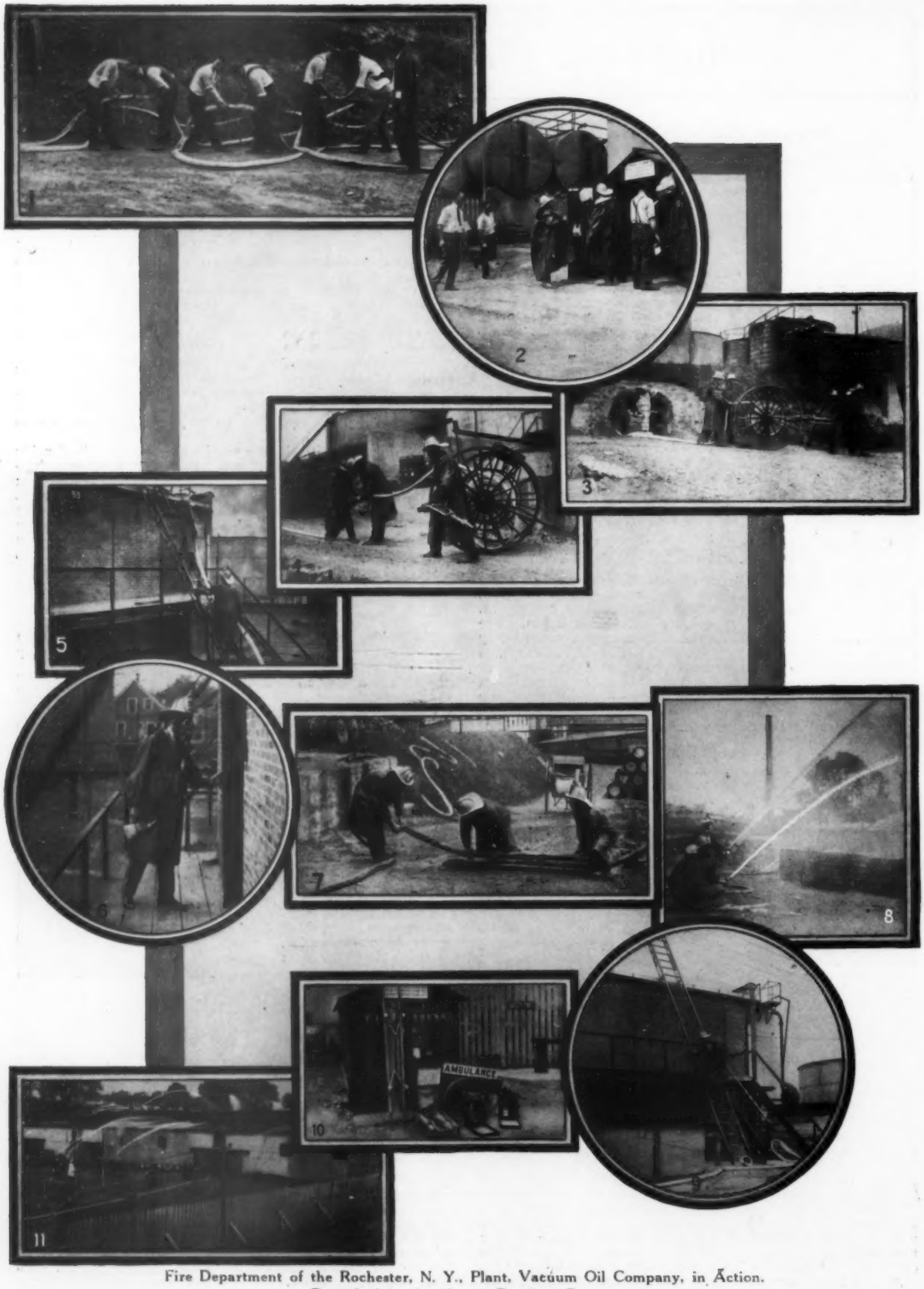
The Late Captain M. J. Dailey

When Captain Dailey fell he partially landed on both feet, the left one being crushed by the wheel of the heavy truck. Gangrene set in while Captain Dailey was at the hospital and the foot was amputated above the ankle. The veteran fireman died six hours after the operation.

Captain Dailey was a member of the Bridgeport fire department for twenty-nine years. He was appointed a callman in October, 1895, and made a permanent member of the department on March 31, 1900. On April 4 of the same year he was promoted to a captaincy. The deceased was a past president of the Connecticut State Firemen's Association. He is survived by his wife, Margaret, and one son, Raymond. Fire department officials from other cities attended the funeral which was the largest ever held for a Bridgeport fireman. Members of the department acted as pall bearers. Interment was in St. Michael's cemetery, Bridgeport.

T. F. MAGNER.

Port Jefferson, N. Y., Considers Fire Station—Plans have been prepared for the construction of a fire station at Port Jefferson, L. I., N. Y., which will be a two story building. On the first floor will be the apparatus floor, work room, boiler room, store room and lockers. On the second floor will be the auditorium, billiard room, meeting room, card room and chief's office.



Fire Department of the Rochester, N. Y., Plant, Vacuum Oil Company, in Action.
Described in Article on Previous Page.

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Buckeye Whistles will clear the way for your apparatus and your officers' cars, many blocks ahead. You can rely upon them, Chief, because they are extremely effective and always dependable.

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A 60-day trial will convince you why almost 400 Fire Chiefs in the United States alone, have recognized in

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All operating threads are above the Stuffing box.

No toggles, small screws or other small, quick-wearing parts.

All moving parts are bronze or bronze bushed.

The outside casing permits replacing a two-way standpipe with a steamer and two-way standpipe without digging up the ground.

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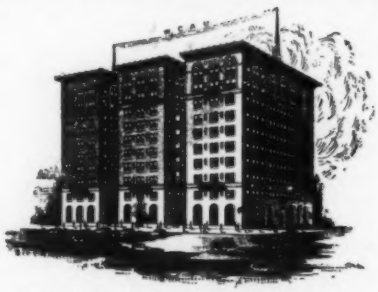

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OF INTEREST TO VOLUNTEER FIRE DEPARTMENTS

Wantagh Takes Up Salvage Work

On the evening of Thursday, April 1st, the board of commissioners of the Wantagh, New York fire department, held an open session of their regular meeting, to which were invited all members of the local department and fire officers of surrounding Long Island towns. The special gathering was held to listen to an instructive address by Captain Albert S. Johnston, veteran officer of the New York Fire Patrol, who was delegated for this duty by Superintendent J. O. Schwank, through the courtesy of the New York Board of Fire Underwriters.

Upon being introduced Capt. Johnston began his address by calling attention to the ever increasing toll of fire and the measures and psychology of fire prevention. He had very helpful suggestions regarding fire fighting in which he related many of his actual experiences covering many years of active service in the busiest districts of New York City. He spoke at length on Fires—Fire Prevention—Ventilation and Inspection. Fires cause the appaling loss of about $550,000,000 per year or $5.00 per capita. About 75 per cent of these fires are caused by carelessness and ignorance; a fire starts in 359 American homes every day, 96 on farms, 15 in hotels, 5 in churches, 2 in theatres and 1 in hospitals. 20,000 human lives are sacrificed and 20,000 people are maimed.

Approaching the main subject of his address, "Salvage," the Captain told of his assignment to make a similar address at Nyack, N. Y., and dwelt briefly on the rapid progress and development made by this organization. He reviewed some of the most famous and disastrous fires at which his own company had operated. Among those mentioned were the Century Fire, Union Square at 17th Street, 568 covers spread; Charles Williams Stores, Brooklyn, 1,600 covers spread; Broadway and Houston Street, 1,200 covers spread. The total covers spread during the fiscal year 1924 by the New York Fire Patrol was 51,789, which as the Captain pointed out will be of interest to those compiling statistics to know that these would cover an area of 250 acres. Back in the 80's it was estimated that the value in merchandise saved by one cover was about $250.00 and his audience was invited to figure out the 1924 saving on this basis, notwithstanding the cost of materials had doubtless more than doubled since then. A strong point made by Captain Johnston was that as all fire waste is an economic waste which affects everybody, this saving was an economic one and a benefit to everybody, and not merely to the Fire Insurance Companies.

In many instances it was stated that the New York Fire Patrol performed service at fires spreading covers and salvaged much property on which there was no insurance involved especially in Municipal buildings, schools and hospitals, citing particularly the disastrous fire in New York's City Hall.

The Captain told half jocularly of a charitable act when in 1871 the New York Fire Patrol loaned six covers to the City of Chicago. The history of this service is unique. It started with the merchants preparing large canvas bags with which they responded to alarms and in case of need loaded the merchandise into the bags and carried it to a safe place until it could be returned. Later the idea of "covering down" to prevent water damage was conceived, it being found then, as now, that much of the damage to the contents of burning buildings is done by water used in the extinguishment. When in due time the insurance interests saw the wisdom of establishing and maintaining such service, the first company was installed in Dutch Street. As fast as it became necessary additional men and apparatus were added, until now at the present time there are 10 companies and 20 fully equipped motor trucks with officers, men and covers in service.

Prior to 1868 no records were kept of the operations of the Patrol. The first annual report issued in 1869 shows that in that year they responded to 637 alarms and spread 2,352 covers. In the year 1923—19,318 alarms were responded to and 10,709 verbal alarms were investigated.

At the conclusion of his address, Captain Johnston and two members of his company gave a very instructive demonstration of actual salvage operations, showing how covers are spread and hung in different situations. This exhibition was greeted with many expressions of interest among those who had no first hand knowledge of this feature of firemanic activities.

It is good to note the increasing interest in salvage operations by regular Fire Departments throughout the country, and it is fortunate indeed that officers interested in such work are able to procure the services of Captain Johnston who informed the visiting fire commissioners and chiefs that he would be glad to address them, and suggested that they communicate with Superintendent J. D. Schwank, 123 William Street, New York City (Fire Patrol).

That they appreciated the merit of this visit is shown by the fact that the Wantagh Board have authorized the purchase of covers to be immediately installed upon their present apparatus.

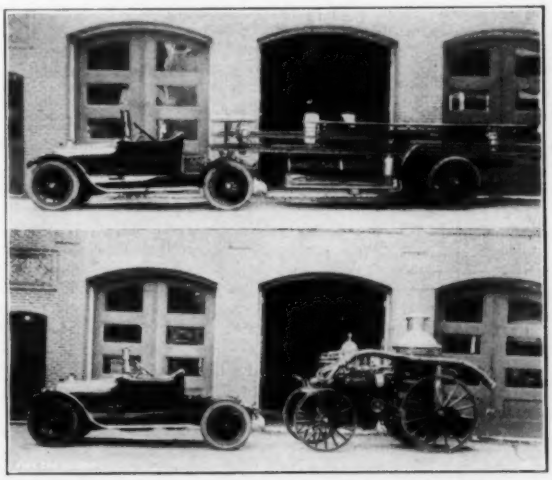
He also spoke of the soft coal hazard which had caused an extra number of fires this year through the county districts where the chimneys are unlined.

Tractor Used to Bring Reserve Apparatus

The Danielson, Conn., fire department, of which A. P. Woodward is Chief, had on its hands an old horse-drawn city service truck and steamer.

Not having funds to replace these machines with motor apparatus, the department took a Cadillac car which was in its possession and arranged it in the form of a tractor.

This car is normally run with the ladder equipment and in the event that additional streams are needed over those provided



Top: Tractor Attached to Ladder Truck, Which It Normally Carries. Lower: Tractor Attached to Steam Fire Engine, Which Is Brought to Fires Only in Emergencies.

by the Seagrave pumper which is in the department, the tractor is detached and sent back to tow the steamer out.

This makes it possible to bring the full complement of apparatus in the department to a fire without appreciable delay and at the same time saves the expense of maintaining horses for this purpose.

This improvised system of employing the old horse-drawn apparatus will be utilized until such time as the department has funds to buy a new fire truck.

Former Chief Weller Not With Gamewell

Press reports state that Former Chief Floyd T. Weller of the Medina, N. Y., Fire Department had joined the staff of the Gamewell Fire Alarm Telegraph Company. We are advised by that company that these reports are incorrect as that company has never approached Chief Weller on this subject.

Plan Arizona Convention—Plans are being made for the third annual convention of the Arizona State Firemen's Association to be held in Winslow on June 10-12. A three days program of entertainment has been arranged for the visitors.

FIRE DEPARTMENT ACTIVITIES

Middletown, Conn., to Erect New Station—Middletown Conn., voted to erect a new fire station estimated to cost $15,000.

New Ladder Truck Invented—A new steel ladder truck carrying a 100-foot steel ladder has been designed and patent applied for by two residents of Bluffton, Ind.

New Ladder Truck for Brigantine, N. J.—American-LaFrance city service ladder truck will be delivered to Brigantine, N. J.

Providence, R. I., May Have New Station—The construction of a new fire station costing $30,000 is sought by a committee of the common council of Providence, R. I.

New Central Station for Burlington, Vt.—Construction has started for the new central fire station for Burlington, Vt. It is believed that the building will be completed in the Fall.

Denison, Ia., Chief Has Long Service—Chief John Muir of Denison, Ia., has rounded forty years of continuous service in the department, nine of which he has served as chief.

Macon, Ga., Apparatus Being Rebuilt—Some of the apparatus in Macon, Ga., is being rebuilt. Delivery is expected of a new Seagrave aerial ladder.

New Signals in Granville, N. Y.—A code of signals is being drafted out in Granville, N. Y., to be used in conjunction with the installation of a new fire siren.

N. Tonawanda, N. Y., to Purchase Pumper—The board of aldermen of North Tonawanda, N. Y., voted to purchase another Seagrave pumper.

Bridgeport Conn., Pays Men Weekly—The firemen of Bridgeport, Conn., are now being payed on a weekly basis instead of the monthly plan as formerly.

Fort Lee, N. J., to Construct Station—Figures are being compiled for the construction of a new fire station in Fort Lee, N. J.

Des Moines, Ia., Removes Apparatus From Service—Due to the discharge of eighteen men to reduce the operating expense of Des Moines, Ia., two pieces of fire apparatus have been taken out of service because of the lack of men to man them.

New Fire Station for Newton, Kans.—A new fire station has been erected in Newton, Kans.; the town now has one station on each side of the railroad tracks the danger from holdup of apparatus due to long trains has been reduced.

Chief Fowler of Gardner, Mass., Resigns—Due to ill health, Chief Albert A. Fowler of the Gardner, Mass., fire department tendered his resignation as head of the department. He will be granted a pension of half his salary.

Vinton, Ia., to Charge for Rural Runs—All rural runs made by the Vinton, Ia., department will be charged for at the rate of $15 an hour and the services of the men will be charged for at the rate of $1 an hour.

Centerville, Ia., Has Fire Prevention Meeting—A large fire prevention meeting sponsored by two of the local fire insurance companies was held in Centerville, Ia. State Fire Marshal Tracy spoke on the fire losses in the state.

Columbia, Pa., to Purchase Pumper—The Columbia Fire Company of Columbia, Pa., voted to purchase an Ahrens-Fox 1,000-gallon pumper to be delivered in time for their housing ceremonies on July 4.

Pennsylvania Towns Organize Ladies Auxiliary—The women's auxiliary of Easton, Pa., have been asked to assist in the organization of a number of auxiliaries in the fire departments of neighboring Pennsylvania towns.

Dunnell, Minn., May Purchase Fire Apparatus—Funds are being raised in Dunnell, Minn., for the purchase of fire apparatus. About $1,000 of this amount has already been pledged.

N. F. P. A. Sets Cost of Farm Fires—At the meeting of the farm protection section of the National Fire Protection Association in Atlantic City, N. J., D. J. Price of the Department of Agriculture estimated the fire loss on the farms at $150,000,000.

Man Indicted for Starting Forest Fire—A resident of Islip, N. Y., was indicted by a grand jury of Suffolk County for having started a forest fire which resulted in the destruction of a large section of the pine belt of Long Island.

Aerial Tower for Albany, N. Y.—A new 65-foot aerial ladder will be placed in service in the Albany, N. Y., department of which Michael J. Fleming is chief, sometime in October. The tower will cost $22,500.

Indianapolis, Ind., Reports Lower Fire Loss—Chief Hutsell of Indianapolis, Ind., reports that the fire losses for the past three months have shown a decrease of $14,822 from the figures for the same period, the previous year. A total of 1,182 fire alarms were received.

Leslie, Mich., Purchases Fire Apparatus—A Boyer fire apparatus will be delivered in June to Leslie, Mich. Half of the purchase price was paid by the village and the other half by popular subscriptions. It will also be used for rural fire protection.

Coatsville, Pa., Opens New Fire Station—A large delegation of firemen from the immediate vicinity witnessed the opening of the $80,000 fire station of the Brandywine Fire Company No. 2 of Coatsville, Pa. A feature of the parade was exhibits of hand-drawn, horse-drawn and modern motor-driven apparatus.

Long Beach, Cal., Tests Pension Law—The legality of the provisions for the creation of a pension in Long Beach, Cal., will be taken to court for an airing. The city auditor objected to making payment of $10,000 to the pension commissioners because the charter did not set forth the pension provisions clearly.

Charity Fund Started in Marshalltown, Ia.—The chapter of the Iowa Association of Fire Fighters in Marshalltown, Ia., has created a fund in which will be placed all moneys received as appreciation for the work of the department. It will be used for the purchase of flowers and for charity work within the department.

Fire Alarm Breaks into Celebration—The receipt of a false alarm broke into the celebration at Dorchester, Mass., of the dedication of a new fire station. There was an entertainment for the children of the district and the distribution of free ice cream cones. In the evening there was a program of more than fifty acts of vaudeville.

More Equipment for E. Rockaway, N. Y.—The department at East Rockaway, L. I., N. Y., received the third piece of Mack equipment within a few days. The department has standardized on Mack apparatus and the new apparatus includes a ladder truck and two triple combination pumpers. Henry Torborg is the newly elected chief of the department.

Strums on Uke as Home Burns—A resident of Egg Harbor, N. J., tried to follow the example of Nero who fiddled as Rome burned. With fire raging around his home, the New Jersey resident sat calmly strumming on his ukulele, and was unmindful of the call for assistance from the fire fighters. He was fined ten dollars and pleaded that fire-fighting was not his business.

Fire Alarm Notes

Dexter, Ia., Purchases Electric Siren—A type B Double Head Federal electric siren was purchased by Dexter, Ia.

Altona, Ill., to Install Siren—A new siren will be installed in Altona, Ill., and controlled from the telephone exchange.

LeMars, Ia., Purchases Siren—The council of LeMars, Ia., purchased an Eric electric fire alarm siren.

Test Made of Providence, R. I., Boxes—A test was made of the fire alarm boxes in Providence, R. I., which were little used in order to insure that they were in working condition.

St. Cloud, Minn., Purchases Cable—St. Cloud, Minn., has awarded contract for supplying twenty miles of fire alarm cable to the Hazard Company of Willsburg, Pa. The one cable will be used by the police and fire alarm signal system. Four companies competed for the contract.

Gamewell Construction Superintendent Dead—Barney McGuire, a construction superintendent for the Gamewell Fire Alarm Telegraph Company for the past eighteen years and in charge of the installation of the new fire alarm system in Mobile, Ala., died on the train while on his way home outside of New York City. His body was accompanied by the city electrician of Mobile, from Atmore, Ala., where he died, to Atlanta, Ga. The deceased is survived by a wife and several children.

Triple Combination Apparatus on 6-Cylinder Seldens

"In-Built Quality" Selden construction guarantees that dependable service demanded of fire trucks.

The 55½ H.P. 6 cyl. motor in the Pacemaker will pump 350 gallons of water per minute.

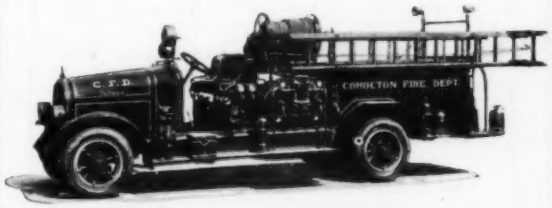
The Roadmaster chassis will take three sizes of 6-cyl. motors, viz.—72 H.P. for pumping 500 gallons per minute, 86 H.P. for pumping 600 gallons per minute, and 110 H.P. for pumping 750 gallons per minute.

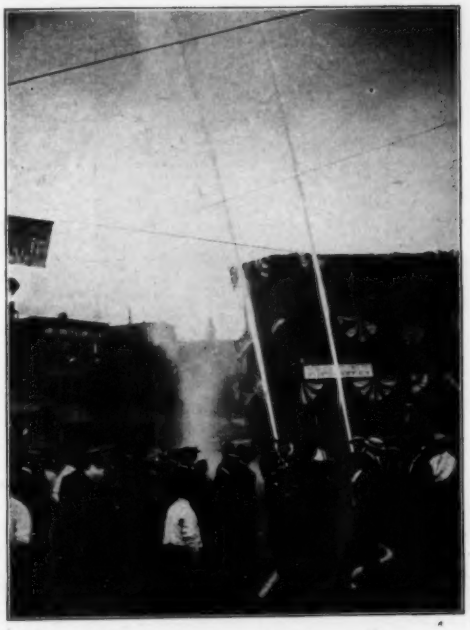
Let us bid on your requirements.

Selden Performance Excels.

SELDEN TRUCK CORPORATION

Rochester, N. Y.





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Produce best fire streams
Repeat orders from all sections prove their value.

Sole Manufacturers

SAMUEL EASTMAN CO.

CONCORD, N. H.

A Nation-Wide Service for Better Protection Against Fire Loss and Water Damage

PROTECTION A.D.T. SERVICES

The remarkably efficient A. D. T. System of Central Station Night Watch and Fire Alarm Service has played a large part in helping to cut down the fire loss of the country; and the A. D. T. System of Sprinkler Supervisory Service has been instrumental in saving millions of dollars in water damage.

An Invaluable Service

It is generally known that water damage in sprinklered premises is considerably greater than fire damage, and it is a fact that in a great majority of sprinklered equipments no one on the premises knows how to shut off the water. Hence, the great importance and value of our Supervisory Service in not only recording water flows, but immediately sending representatives who know how to stop them.

Over $20,000,000,000

worth of property throughout the country is protected by A. D. T. services, and fire officials in cities everywhere are finding A. D. T. cooperation an invaluable aid in their work.

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of Every Description

QUALITY GUARANTEED

Right Prices
Prompt Deliveries

We Also Make the Durable "ROSS" HELMET

Our latest catalogue and price list will gladly be sent on request.

EVERSON-ROSS CO., INC.

88 Chambers St., New York

This Signal two-collar shirt is now regulation style among fire fighters in many large American cities. Let us send samples.

Signal Shirt Company
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Signal

UNIFORMS

Made for FIREMEN, POLICEMEN, BANDSMEN, LETTER CARRIERS, CHAUFFEURS, TAXI or BUS DRIVERS, RAILROADMEN, WAR VETERANS, etc.

CARRIED IN STOCK, IMMEDIATE DELIVERY — or cut and tailored to-measure.

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you always get correct tailoring, dependable quality, reliable workmanship, at the lowest prices consistent with values.

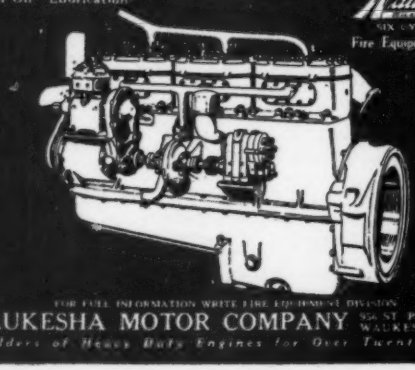
Catalogue illustrating the popular Styles of Firemen's Service Parade Uniforms or for prize contests, as well as Shirts, Belts, Hats, Caps, Badges, Banners, &c., mailed on request.

Write giving Number of Outfits desired and color Cloth preferred.

HENDERSON & CO.
11th & Race Sts., Philadelphia, Pa.

The Engine with "Fresh Oil" Lubrication

Waukesha
SIX CYLINDER
Fire Equipment Engines



FOR FULL INFORMATION WRITE FIRE EQUIPMENT DIVISION

WAUKESHA MOTOR COMPANY 556 ST. PAUL STREET WAUKESHA, WIS.

"Builders of Heavy Duty Engines for Over Twenty Years"

FALSE ALARMS

HEINIE'S JOB

Heinie, the popular Long Beach "squad man" with the long arms, is frequently asked to direct people coming to the fire station inquiring of various locations. On these occasions, he uses his arms so much that the topic of conversation about the station is nearly always of Heinie's long arm.

At the noon hour the topic of conversation ran to sheep-herding. One man, who is not noted for saying much, remarked, "Well, that's no job for Heinie. He'd knock down a half dozen sheep every hour trying to direct 'em across the road."—*Contributed by E. D. Barnett, Long Beach Fire Dept.*

FLY AWAY BIRDIE

Thomas Jefferson Jackson, a large colored man, and a foremost member of the Royal Vigilant Colored Fire Company, was being tried for assault and battery upon his wife, Irene. The judge asked him for an explanation of his conduct, which he gave as follows:

"Jedge, Ah's a hard-workin' man, Ah is. Ah works all day hard at de docks an' den Ah goes to fires wid the Royal Vigilant Fire Company. Mah wife always wants to do what Ah does and las' night when Ah comes home fo' suppah Ah looks 'roun' fo' mah wife an' Ah don' see her, so Ah goes upstairs an' dere she is all dressed up and primpin' herself befo' a mirror. 'Ahrene,' Ah says, 'Where is mah vittles?' 'Gon on, don, bodder me, niggah,' she says, 'Ah's a member of a lodge now.'

"Jedge, dat made me sore, an' Ah asked her ag'in fo' ma suppah, and she said, 'Ad done tol' you once not to bodder me about vittles. Ah belong to de Ladies' Artillery of de Culled Eagles.'

"Jedge, Ah got so mad dat Ah picked dat woman right up an frew her out de window, an' said: 'If you is an eagle, den fly away, birdie, fly away!'"

FAME AND NOTORIETY

The fire chief of a large French city recently visited the United States. During his stay in one of the prominent eastern cities he was shown through the city and surrounding country section and remarked upon the excellent state of the streets and roads, which impressed him from the standpoint of a fire officer.

"Your great number of motor cars and the wonderful roads you are building lower the cost of operating them.

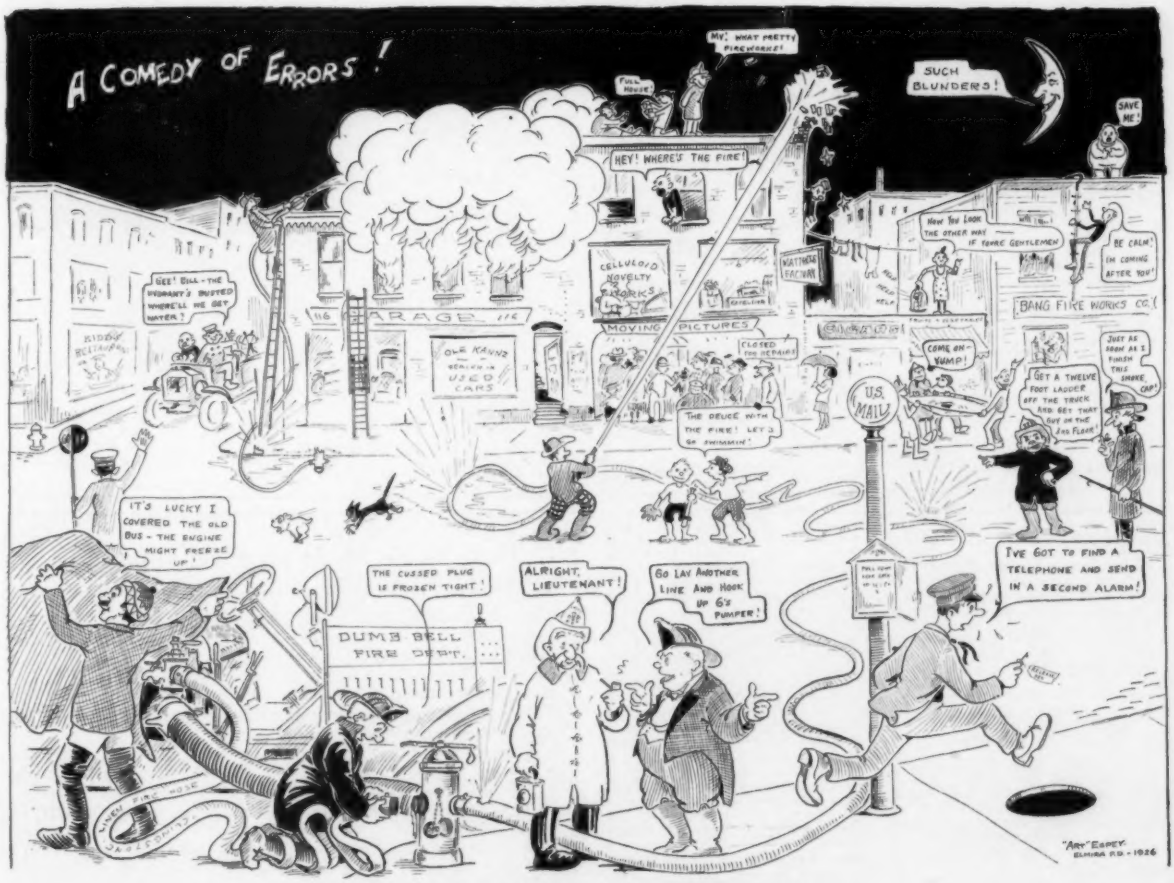
"Many miles are excellent—marvellous! And many more miles are in need of improvement. But it is wonderful!

"Lincoln has built a wonderful highway, and that Jefferson route from the Gulf of Mexico to Canada—palms to pines, they said—is a great road.

"But then there is another road builder running wild in your admirable country. His name is Detour, a Frenchman, perhaps, and very eccentric. I care less for his kind of roads."

SWIFT FIRE FIGHTING IN CHICAGO

James C. Swift, janitor and son of the owner of a flat building at Sixty-seventh Street and Merill Avenue, Chicago, becomes peeved when firemen order him out of building when it catches fire. He orders firemen to remove ladders from his lawn because it is soft following rain. Fight ensues, in which Battalion Chief Bertram Fisher's eye is blackened and Swift lands in jail.


A COMEDY OF ERRORS!
MY! WHAT PRETTY FIREWORKS!
FULL HOUSE
SUCH BLUNDERS!
SAVE ME!
HEY! WHERE'S THE FIRE!
CELLULOID NOVELTY FABRICS
MOVING PICTURES
CLOSED FOR REPAIRS
GEE! BILL - THE HYDRANT'S BUSTED WHERE'LL WE GET WATER?
GARAGE
116
ONE KANYR
USED CARS
HOW YOU LOOK THE OTHER WAY IF YOWRE GENTLEMEN
BE CALM! I'M COMING AFTER YOU!
BANG FIRE WORKS CO.
COME ON - YUMP!
JUST AS SOON AS I FINISH THIS SMOKE, CAP!
GET A TWELVE FOOT LADDER OFF THE TRUCK AND GET THAT GUY ON THE 2ND FLOOR!
U.S. MAIL
THE DEUCE WITH THE FIRE! LET'S GO SWIMMIN'
IT'S LUCKY I COVERED THE OLD BUS - THE ENGINE MIGHT FREEZE UP!
THE CUSSED PLUG IS FROZEN TIGHT!
ALRIGHT, LIEUTENANT!
GO LAY ANOTHER LINE AND HOOK UP 6'S PUMPER!
I'VE GOT TO FIND A TELEPHONE AND SEND IN A SECOND ALARM!
DUMB BELL FIRE DEPT.
"ART" ESPEY. ELMIRA N.Y. - 1926

A Fire Department Comedy of Errors, By "Art" Espey

PROPOSED IMPROVEMENTS

Waynedale (Mail Ft. Wayne) Allen Co., Ind.—Volunteer fire department to be formed here. Funds being raised for purchase of necessary apparatus and equipment.

Hastings, Mills Co., Iowa—Considering organization of fire company.

Madison, Yolo Co., Calif.—To purchase new fire truck. A. A. Cadenasso, Director.

Garden Grove, Orange Co., Calif.—Fire district to be formed. New equipment to be purchased.

Grass Valley, Nevada Co., Cal.—William Sproul, Chief of Fire Department and Fire Delegates recommended to City Council that the fire department be improved.

Salem, Washtenaw Co., Mich.—Funds to the amount of $4,000 being raised for purchase of new fire apparatus.

Montesano, Grays Harbor Co., Wash.—Funds being raised by fire department to purchase additional equipment.

Steelton, Dauphin Co., Pa.—Bids are being invited for three pumpers of from 350 to 400 gals. per minute capacity, also alternate bids for one 500 gal. pumper and two combination cars.

Linton, Emmons Co., N. Dak.—New fire station is to be built.

Cuyahoga Falls, Summit Co. Ohio—Council considering erection of new fire station.

Norfolk, Norfolk Co., Va.—New fire station in the ninth ward will be erected.

Lingle, Goshen Co., Wyo.—Fire department is organized with Guy Sixberry, Chief.

Franklin Lakes, Bergen Co., N. J.—Borough Council passed ordinance authorizing the purchase of 1,000 feet of 2½-inch double jacket fire hose in accordance with specifications on file with Delbert Teter, Borough Clerk. (Near Ramsey, N. J.)

Medford, Burlington Co., N. J.—To purchase a 600-gal. triple combination car for volunteer fire department.

Port Jefferson, Suffolk Co., N. Y.—Apparatus and equipment to be purchased immediately after erection of station is completed.

Neffs, Belmont Co., Ohio—Agitating for the purchase of fire apparatus after a large fire.

Fairview Village, Rocky River, Ohio—Edw. C. Joechin, Chief of Fire Dept., 20800 Lorain Road, wants literature on Fire Station Automatic Door Openers.

Whitehall, Montour Co., Penn.—A $300,000 bond issue was defeated; part of this amount was to be used for the purchase of fire apparatus.

Somerset, Somerset Co., Penn.—At recent election it was voted in favor of a $30,000 bond issue for the purchase of additional fire fighting equipment.

Cobleskill, Schoharie Co., N. Y.—Village vote June 5, on a $6,000 bond issue for purchase of hook and ladder truck. A. J. Finn, Fire Chief.

FOR SALE
Fire Apparatus

One Single Tank Combination Chemical and Hose Car, hose body capacity 500 feet 2½" fire hose, 150 feet chemical hose. Fully equipped. Price very attractive. Address John Kubovic, Chief of Fire Dept., Slovan, Pa.
6-10

Port Jefferson, Suffolk Co., N. Y.—New fire station to be erected here at cost of $65,000.

Hamilton, Butler Co., Ohio—New fire station to be erected on west side.

Snohomish, Snohomish Co., Wash.—A $17,000 bond issue will be voted on June 19 for erection of fire station.

Moscow, Latah Co., Idaho—A two story fire station will be erected early next spring.

Capron, Boone Co., Ill.—City voted in favor of a bond issue for erection of fire station.

Moweaqua, Shelby Co., Ill.—City voted in favor of the purchase of fire apparatus, to cost $6,000.

Postville, Allamakee Co., Iowa—Contemplating the purchase of fire apparatus. W. J. Hanks, Mayor.

Newell, Buena Vista Co., Iowa—Newell Fire department raising funds for purchase of chassis and equipment.

Clinton, Hunterdon Co., N. J.—It was voted to purchase a pumper with chemical tanks at cost of $8,000 instead of a $6,500 car.

Gustine, Merced Co., Cal.—Fire Chief Manlove recommended the purchase of a siren to take place of bell now being used.

Rolette, Rolette Co., N. Dak.—Considering the purchase of fire equipment.

South Akron, (Mail Akron) Summit Co., Ohio—The organization of a Volunteer Fire Company and purchase of all necessary equipment is under consideration. The Chairman of the Committee in charge, Mr. Chas. S. Wellock, R. D. Box 77, writes that he is anxious to get all information possible, before submitting bond issue to voters in the fall.

Gold Hill, Jackson Co., Ore.—Fire department to purchase siren.

Norwich, Conn.—Annual report of the Board of Fire Commissioners recommend the erection of a new fire station in west side of city.

Bradenton, Manatee Co., Fla.—Fire Chief A. W. Harris, to recommend to the City Council the purchase of three new pieces of apparatus, and automatic fire alarm system and the erection of two fire stations.

Fort Myers, Lee Co., Fla.—Erection of fire house in East Fort Myers is being rushed; apparatus and equipment to be purchased.

Hazelton, Luzerne Co., Penn.—Theodore Reichman, Borough Engineer stated that fire hose is in bad condition.

Bellingham, Whatcom Co., Wash.—Emergency bill passed in order to issue $75,000 in bonds for erection of a new central fire station.

Iowa City, Johnson Co., Iowa—City Clerk George J. Dohrer wants prices on hook and ladder truck fully equipped.

Winfred, Henry Co., Iowa—New equipment to be purchased for fire department to include a chemical tank, hook ladders, ladder cart, hose cart, etc.

Pelham, Westchester Co., N. Y.—Election may be held in June on a $100,000 bond issue for fire stations.

New Castle, Lawrence Co., Pa.—City may vote at the November election on construction of fire house and purchase of equipment.

York, York Co., Pa.—Charter granted to the Grantley Fire Co. President, W. C. Throne.

New England Chiefs' Convention

(*Continued from page* 566)

Franklin H. Wentworth, secretary of the National Fire Protection Association; Chief Ray D. Wells, of Falmouth, Mass.; Ex-chief F. A. Murray, of Morris Cove, Conn.; Irvin F. Richardson, of Portland, Me.; and E. F. Lamprey, of Aurora, Ill.

At 6 p. m. on June 22 the chiefs and their guests including the ladies will be tendered a banquet in the ballroom of the Hotel Carpenter. The evening will be devoted to a round table discussion and question box at the conclusion of the dinner. Chiefs are invited to submit topics for discussion.

The armory where the exhibits will be held is on Pleasant street near Franklin street and only about 500 feet distant from the convention headquarters in the Hotel Carpenter which is at the corner of Franklin and West Merrimac streets.

Features of the convention will include various fire appliance demonstrations and a parade and review of the Manchester Fire Department. Music for all occasions will be furnished by the band of the Manchester Fire Department.

The program is as follows:

Tuesday, June 22

9 A. M.—Registration at Hotel Carpenter.

2:30 P. M.—Opening of Convention by President Johnson. Selection by Quartet. Address of Welcome by Hon. Charles W. Tobey, president of the New Hampshire State Senate. Addresses by the Mayor of Manchester and by Chief Charles H. French, of the Manchester Fire Department. Response to Addresses of Welcome by George S. McCarty, Fire Commissioner of Lewiston, Me. Selection by Quartet. Memorial Address by the Rev. Ezra F. Ferris. Selection by Quartet. Prayer. Roll Call of Deceased Members.

6 P. M.—Banquet in ballroom of Hotel Carpenter.

8 P. M.—Appointment of Committees, Reports of Committees for Previous Year, Report of Secretary and Treasurer, Question Box and Round Table Discussion.

Wednesday, June 23

9 A. M.—Assemble for Group Photograph.

9:30 A. M.—Convention session in Hotel Carpenter ballroom. Address: "Co-operation of Fire Departments and Insurance Companies," by Col. William B. Burpee, of the New Hampshire Insurance Company. Address by Chief John M. Evans, of New Orleans, La. Address: "Dusts and Their Relation to Explosions at Fires," by Fred Shepperd, managing editor of FIRE ENGINEERING." Address: "Traffic Regulation," by Chief Michael J. Healy, of the Manchester, N. H., Police Department. Address: "Progress Made in the Standardization of Fire Hose Threads," by John S. Caldwell, engineer of the New England Insurance Exchange.

11:30 A. M.—Tour of Fire Stations and Luncheon.

Afternoon and Evening: Visits to Exhibition in State Armory and demonstration by tthe Foamite-Childs Corporation.

Thursday, June 24

9 A. M.—Convention Session in Hotel Carpenter Ballroom. Address by Franklin H. Wentworth, Secretary of the National Fire Protection Association. Address: "Fire Protection for the Small Town," by Chief Ray D.. Wells, of Falmouth, Mass. Address: "The Evolution of Fire Departments," by Ex-chief F. A. Murray, of Morris Cove, Conn. Address: "The Lubrication of Motor Fire Apparatus," by Irvin F. Richardson. Address: "Snow Removal Problems," by E. F. Lamprey, of the Barber-Greene Company, Aurora, Ill. Unfinished Business. Election of Officers. Adjournment.

Parade and Review of Manchester Fire Department.

List of Exhibitors

American-LaFrance Fire Engine Co.
The Seagrave Corp.
Combination Ladder Co.
Maxim Motor Company.
Foamite-Childs Corp.
Amdyco Corporation.
Eureka Fire Hose Co.
A. H. Blanchard.
The Gamewell Co.
Samuel Eastman Co.
Republic Rubber Co.
Fabric Fire Hose Co.
Holtzer-Cabot Electric Co.
Mack Motor Truck Co.
American Fire Equipment Co.
McNeil-Olson Co.
C. G. Braxmer Co.
D. E. McCann Sons.
R. D. Wood & Co.
The H. K. Barnes Co.
Fire Engineering.

Tests to Be Made on Fire Apparatus

(*Continued from page* 578)

12:30 P. M. Complimentary Luncheon, Hotel Utica.
Automobile to General Offices and Plant of Foamite-Childs Corporation, Turner Street.

2:00 P. M. Indoor Demonstrations of Fire Appliance Manufacturing Processes and Laboratory Practice.

3:00 P. M. Outdoor Demonstrations at the Experimental Station, adjoining main building.
Free burning fires: Oil fires: Carbide fires: Paint fires: Dip Tank fires, etc. Test showing fire extinguishing efficiencies of different types of extinguishers and engines.

5:30 P. M. Adjourn to Yahnundasis Golf Club, New Hartford, by automobile.

6:00 P. M. Complimentary Dinner.

7:30 P. M. Round Table Discussion.
Motion Pictures, Entertainment.

Novo Acid Jars & Holders

of every description, stronger than lead and none-corrosive. Used by departments throughout the country.

Chemical Tanks and Lally Quick Opening and Self-packing Top for Chemical Tanks

Lally Improved Fire Hose Couplings, Fire Extinguishers and Charges, Fire Hose and Fire Department Supplies in General

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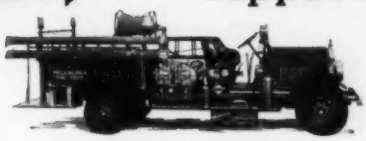
Wilmington Brass Co., Wilmington, Del.

Sanford Fire Apparatus



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TRADE MARK

Foam Fire Extinguisher — Chemical Fire Extinguisher — Portable Searchlight — Red Safety Light.

AMERICAN FIRE EQUIPMENT CO.

9 Broad St., Boston, Mass.

RED ARROW SIREN

Siren with Storm Hood

1. Double-tone, and of greatest carrying power.
2. Ball bearings throughout.
3. Accurately machined and balanced.

30 Days' Free Trial

Write for Circulars

DECOT MACHINE WORKS

Sauk City, Wis.

Beat the Fire to it with an ERICK ELECTRIC SIREN

30 Days Free Trial

For Volunteer Fire Departments in towns of from 300 to 5,000 population, there isn't a Siren or a system in the world to equal the Erick. Night and day—year in and year out—it offers best protection to lives and property. The Erick is the only Siren using one big whistle on a powerful 3 and 5 h. p. motor which throws its sound evenly in all directions—louder and more penetratingly than all others. Write for full information and details of liberal 30 Day Free Trial Offer.

Erick Electric Siren Co., Inc.

95 S. Wabasha St., St. Paul, Minn.

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have all the good points.

- *The most convenient size—12 x 18 feet*
- *The right weight—About 38 pounds*
- *Strong, heavy duck and lapped seams*
- *An absolutely waterproof double coating of a high grade, long life, rubber compound*

Many large Protective Departments use them

Send for our circular

CLIFTON MFG. CO.

Jamaica Plant District **Boston, Mass.**

Compressed Air Fire Whistles, Fire Alarm Boxes, Gongs, Etc.

Complete Systems Installed

Estimates Cheerfully Given

LOPER FIRE ALARM COMPANY

Stonington, Conn.

Cloth Uniform Caps for Firemen

Made of high quality blue uniform cloth, guaranteed not to fade. Cut on the New York Fire Dept. regulation pattern. Price $2.25, Postage extra. Other grades, $1.75 and up.

GEORGE BRUNSSEN COMPANY

151 Greene St., New York

MAXIM City Service TRUCKS

with Maxim-Built Ladders

are unsurpassed for design, completeness of equipment and sturdiness of construction. Like all Maxim apparatus and equipment, they are built "Just a Little Better All Around."

MAXIM MOTOR COMPANY, Middleboro, Mass.

Metropolitan Sales Agents:

The Woodhouse Manufacturing Co., 35 Warren St., New York

The "Fyr-Foe" Twin Pumper

for Fords

The "Fyr-Foe Auto-Powered" Pumper makes use of the 15 brake horse-power in a Ford car or truck at a price within range of the smallest communities, providing adequate fire protection at a fraction of the cost of big apparatus.

Send for complete details.

Jaeger Portable Power Corp.

Woodbridge at Rivard St., Detroit, Mich.

The STOUGHTON

Community Fire Fighter is Designed Especially for Small Towns

Fire apparatus for volunteer and small town fire departments must be designed, built and equipped to meet particular requirements. It must be a combination of several distinct types built for city use. It must be complete in every detail.

The Stoughton, the *Original Community Fire Fighter*, is designed to meet these requirements and made in three sizes,—300—350 and 500 gallon capacities. Each model and every piece of apparatus guaranteed to pass the National Board of Fire Underwriters' twelve-hour pumping tests.

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FIRE EQUIPMENT DIVISION, STOUGHTON, WIS.

STOUGHTON FIRE APPARATUS CO., 230 W. 57th St., New York City, Eastern Representatives

EDDY Fire Hydrants

Are given preference by so many fire protection and water works men because they know that more than half a century of experience go into their manufacture and they embody valuable and exclusive features.

Write for the Facts

EDDY VALVE CO.

Waterford, N. Y.

James B. Clow & Sons, Chicago Agents

LARKIN Shut-off Nozzles

Over 2000 Fire Departments

have 15,000 Larkin Shut-off Nozzles in service. They have a successful record that is not exceeded by any article used in the fire service. Specify and insist upon them in buying new apparatus.

Write for catalog

The LARKIN Mfg. Co.

Dayton, Ohio

High Grade Fire Dept. Supplies of All Kinds

HAHN

Motor Fire Apparatus

Write for literature and prices on our 250, 350, 500 and 750-gallon triple combinations, chemical and hose combinations and city service trucks.

Hahn Motor Truck Co.,

Hamburg, Pa.

The "Corey" Fire Hydrant of the improved Rensselaer type is the easiest to operate of any on the market.

Ask for prices and details

FILL IN AND MAIL TO

RENSSELAER VALVE CO., Troy, N. Y.
Send me Hydrant Book, No. 9.

Name .....

Street ..... City .....

Attractive Dealer Propositions

Good territory still open to men experienced in selling fire apparatus

New Models — All sizes to 1000 gallons. All powerful 6 cylinder Motors — Pumpers, Ladder Trucks, Combinations.

Kenosha Fire Engine and Truck Co.

Kenosha, Wis.

CONVENTION DATES

June 10-12—ARIZONA STATE FIREMEN'S ASSOCIATION. 3rd Annual Convention, Prescott, Arizona. Secretary-Treasurer, Chief W. J. Nemeck, Douglas, Ariz.

June 11-12—LEBANON COUNTY FIREMEN'S ASSOCIATION. Annual Convention, Myerstown, Pa. Secretary, William I. Kutz, Box 233, Myerstown, Pa.

June 14-17—OKLAHOMA STATE FIREMEN'S ASSOCIATION. Annual Convention, Firemen's Training School and Fire Prevention Institute, Enid, Okla. Secretary, Charles Slemp, 636 East 12th St., Oklahoma City. Director, Training School, J. E. Taplin, Blackwell.

June 15-16—MINNESOTA STATE FIRE DEPARTMENT ASSOCIATION. 54th Annual Convention, New Ulm, Minn. Secretary, Ex-Chief John A. Gross, 1110 Harmon Place, Minneapolis, Minn.

June 15-16—SIX COUNTY FIREMEN'S ASSOCIATION. Annual Convention, Shamokin, Pa. Secretary, Charles McCabe, Friendship Fire Station, Shamokin.

June 15-18—UNIVERSITY OF ILLINOIS COURSE IN FIRE PREVENTION CONTROL, AND EXTINGUISHMENT. Annual Course, to be held at the University.

June 16-18—NEW YORK STATE ASSOCIATION OF FIRE CHIEFS. 20th Annual Convention, Hotel Van Curler, Schenectady, N. Y. Secretary-Treasurer, Chief James H. Golden, Fire Department, Cohoes, N. Y.

June 16-19—WISCONSIN STATE FIREMEN'S ASSOCIATION. 39th Annual Convention and Tournament, Cedarburg, Wis. Recording Secretary, E. Philip Mueller, Jefferson, Wis. State Organizer, Chief H. H. Niemeyer, Portage.

June 21-23—OREGON STATE FIRE CHIEFS' ASSOCIATION. Annual Convention, Corvallis, Ore.

June 22-24—NEW ENGLAND ASSOCIATION OF FIRE CHIEFS. Fourth Annual Convention, Hotel Carpenter, corner Merrimack and Franklin Sts., Manchester, N. H. Exhibit Hall, New Hampshire State Armory, Secretary, Chief John W. O'Hearn, Watertown, Mass. Chairman, Exhibit Com., Chief Henry H. Heitman, Waterbury, Conn.

June 22-24—SOUTHERN NEW YORK VOLUNTEER FIREMEN'S ASSOCIATION. 31st Annual Convention and Tournament, Islip, Long Island, N. Y. Secretary, August Kalb, 27 N. Centre Ave., Rockville Centre, L. I.

June 24-25—SOUTH CAROLINA STATE FIREMEN'S ASSOCIATION. 21st Annual Convention, Charleston, S. C. Secretary, R. S. Hood, Sumter.

July 13-15—MICHIGAN STATE FIREMEN'S ASSOCIATION. 52nd Annual Convention, Caro, Mich. Secretary, H. L. Williams, Ludington, Mich.

July 14—DELAWARE STATE VOLUNTEER FIREMEN'S ASSOCIATION. 6th Annual Convention, New Castle, New Castle County, Del. Secretary, Sam H. Carson, Dover. President, Geo. Clifton Maull, Lewes.

July 21-22—CENTRAL NEW YORK VOLUNTEER FIREMEN'S ASSOCIATION. 33d Annual Convention and Parade, Endicott, N. Y. Secretary, Millwood Fitch, Moravia, N. Y. Secretary, Local Committee, Floyd L. Jackson, Endicott.

July 26-28—MONTANA STATE FIREMEN'S ASSOCIATION. 35th Annual Convention, Big Timber, Mont. Secretary, D. E. Moser, Bozeman, Mont.

July 27-28—WESTERN NEW YORK VOLUNTEER FIREMEN'S Association. Annual Convention, Kenmore, N. Y. Secretary, Henry A. Clark, 21 Porter Ave., Batavia, N. Y.

Aug.—CENTRAL PENNSYLVANIA VOLUNTEER FIREMEN'S ASSOCIATION. Annual Convention, Tyrone, Pa.

Aug. 2-4—COLORADO STATE FIREMEN'S ASSOCIATION. 10th Annual Convention, Denver, Col. Secretary, Clinton Turnbull, Fire Department, Denver, Col.

Aug. 9-14—WESTERN PENNSYLVANIA FIREMEN'S ASSOCIATION. 33rd Annual Convention, New Kensington, Pa. Secretary Convention Committee, R. A. Kanouff, New Kensington.

Aug. 16-18—UTAH STATE FIREMEN'S ASSOCIATION. Annual Convention, and Tournament, Park City, Utah. Secretary, Fred Peters, Murray, Utah.

Aug. 16-19—FIREMEN'S ASSOCIATION OF THE STATE OF NEW YORK. 54th Annual Convention, Alexandria Bay, N. Y. Secretary, Fred A. Davis, Fort Edward, N. Y.; Treasurer, William H. Swartout, 115 Main Street, Ossining, N. Y.

Aug. 19-20—CONNECTICUT STATE FIREMEN'S ASSOCIATION. 43rd Annual Convention, Elks' Home, Washington St., New London, Conn. Secretary, D. W. Harford, South Norwalk.

Aug. 24-27—DOMINION ASSOCIATION OF FIRE CHIEFS. 18th Annual Convention, Windsor, Ont. Secretary, Chief James Armstrong, Kingston, Ont.

Sept. 13-15—KENTUCKY FIRE CHIEFS' ASSOCIATION. Annual Convention, Fire Department Drill School, Louisville, Ky. Secretary, Captain S. G. Render, Fire Department Instructor, 303 Speed Building, Louisville. For exhibits at State Fair, Sept. 13-18, address State Department of Fire Prevention and Rates, Frankfort, Ky.

Sept. 14-15—IOWA STATE FIREMEN'S ASSOCIATION. 49th Annual Convention, Manning, Ia. Secretary, E. E. Parsons, Marion.

Sept. 14-16—MASSACHUSETTS STATE FIREMEN'S ASSOCIATION. 47th Annual Convention, Fall River, Mass. Secretary, Daniel J. Looney, 1046 Old South Building, Boston, Mass.

Sept. 21-24—INTERNATIONAL ASSOCIATION OF MUNICIPAL ELECTRICIANS. 30th Annual Convention, Battery Park Hotel, Ashville, N. C. Secretary, William R. Arbuckle, Supt. Fire Alarm, Bayonne, N. J. Chairman Exhibit Committee, Daniel J. Morgan, Sales Engr., Hazard Mfg. Co., Wilkes-Barre, Pa.

Sept. 22-23—INDIANA STATE FIREMEN'S ASSOCIATION. 9th Annual Convention, Marion, Ind. Secretary, Frank H. Miller, Fire Headquarters, Terre Haute, Ind.

Sept. 24—NEW JERSEY FIRE CHIEFS' ASSOCIATION. Annual Convention, Atlantic City, N. J. Secretary, Fred A. Trowbridge, 17 South Street, Morristown, N. J.

Sept. 24-25—NEW JERSEY STATE FIREMEN'S ASSOCIATION. 49th Annual Convention, Atlantic City, N. J. Secretary, William Exall, Chamber of Commerce Building, Newark, N. J.

Sept. 27-29—ARKANSAS STATE FIREMEN'S ASSOCIATION. Annual Convention, Jonesboro, Ark. Date of meeting tentative. H. S. Compton, secretary, Central Fire Station, Little Rock, Ark.

Sept. 27-29—KANSAS STATE FIRE CHIEFS' AND STATE FIREMEN'S ASSOCIATIONS. 10th and 39th Annual Conventions, respectively, Manhattan, Kan. Secretary, Chief K. D. Doyle, Wamego, Kan.

Oct. 4-9—INTERNATIONAL ASSOCIATION OF FIRE FIGHTERS. Annual Convention, Hotel Adelphia, Philadelphia, Pa. Secretary-Treasurer, Geo. J. Richardson, Rooms 105-6, A. F. of L. Bldg., Washington, D. C.

Oct. 5-7—FIREMEN'S ASSOCIATION OF THE STATE OF PENNSYLVANIA. Annual Convention, Philadelphia, Pa. Secretary, Charles F. Clark, 411 Bellevue Avenue, Wayne, Pa.

Oct. 12-15—PACIFIC COAST ASSOCIATION OF FIRE CHIEFS. 33rd Annual Convention, Fresno, Cal. Secretary, Chief Jay W. Stevens, 1014 Merchants Exchange Building, San Francisco, Cal.

Oct. 19-22—INTERNATIONAL ASSOCIATION OF FIRE ENGINEERS. 54th Annual Convention, Hotel Roosevelt, New Orleans, La. Secretary, Chief James J. Mulcahy, Yonkers, N. Y. Chairman Exhibit Committee, Chief Wm. F. Daley, Brockton, Mass.

Oct. 20—OFFICERS' ASSO. FIRE PATROLS, SALVAGE CORPS AND PROTECTIVE DEPTS. OF U. S. AND CANADA. Meeting at New Orleans in connection with I. A. F. E. Convention. Secretary, John Ashmead, 76 William St., New York City.

Two Errors Responsible for Large Fire

(*Continued from page* 558)

torily. If necessity calls for it, two lines from one company could be siamesed into a single line supplying a heavy calibre stream for operation at the rear.

It is very likely, however, that the covering of exposures at the early stages of the fire as well as getting lines in operation both front and rear in sufficient number would quickly check the fire.

No criticism whatsoever can be offered to the manner in which the Chief of the Department handled the fire. The blame for the extent of the fire lay entirely with the officer arriving with the first company who did not transmit a call for help promptly, who did not call sufficient help, and who failed to cover exposures.

Modern Fire Alarm Signalling

(*Continued from page* 559)

governor. This acts the same as any other governor either speeding up or slowing down the movement. It will either be a flat wide fan or a narrow thin one with two small weights attached. Now trip your box and start your stop watch at the first blow and stop it just as it comes to the starting point again. Now if the box was properly timed, your stop watch should equal just 22¾ seconds. You now have an idea of how much faster your box must travel. Now take and move back the weights evenly on the fan, if it is that type, and secure them; if it is a wide fan with no weights cut a narrow strip on both ends. Move the weights about ⅛-inch toward shaft. Then trip your box and time it, for one round—suppose it is 17¼ seconds, it is still too slow so move them a little more or cut a little more off the fan. Do so until you obtain just exactly what time you desire. Now trip your box and let it run the entire four rounds—it should equal just 61 seconds or 1 minute and 1 second from the first blow to the stopping of the box. Next trip the box and see if your blows are just one second apart if they are your box is perfect.

To make a box slower, get your correct time and put the weights farther out on the fan until you get the desired result. If of the wide fan type melt a little solder on each end of the fan until you get correct time, if too much file a little off. You can now return the movement to the case connect up your wires as before and as a precaution try out the box again before leaving testing bench. Be sure you do not leave the box wiring so as it is possible for it to get in the gearing and stop the movement. This is the purpose of this test. When the box is all right you can return it and bring another one in to retime. Do not try to bring in too many at one time, and remember a little practice and patience will reward you. The writer will help you figure out the correct time for your boxes of any number and remember questions are answered free. It is only necessary to enclose a self addressed stamped envelope for reply. The next article will take up Storage Batteries, Types, Operation, Installation and Servicing.

Empire Municipal Index Published

The forty-fourth annual issue of the Empire Municipal Directory for the years 1926 to 1927 has been published by Municipal Engineering.

It contains a list of the various city and town officials of the United Kingdom as well as the names of the borough officials. There is a brief description of the various fire appliances in common use in England.

East Moline, Ill., to Move Station—East Moline, Ill., will construct a new fire station north of the railroad tracks. An announcement has been made that the city is clear of debt.

Urges Increase in Chattanooga, Tenn., Force—An increase in the fire-fighting force is being urged by the Tennessee Inspection Bureau in order to maintain its high rating. The city has annexed a large amount of territory, and the purchase of a pumper and two ladder trucks are urged.

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We will then notify reliable manufacturers of such equipment of your interest and request that they send you complete information. They will gladly do this and it will be a pleasure for us to help you in this way. So go to it! Help yourself.

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3 Acid Jars and Rings.
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5 Aerial Trucks.
6 Alarms, Siren, Electric.
7 Alarm Systems, Industrial.
8 Alarm Systems, Municipal Telegraphic.
9 Alarms, Thermostatic.
10 Asbestos Clothing.
11 Badges, Insignias, Buttons, etc.
12 Banners, Trumpets, etc.
13 Battery Jars.
14 Battery Zincs for Fire Alarm Batteries.
15 Bells, Fire Alarm, Municipal.
16 Body Equipments.
17 Boxes, Gongs, Reels, Registers, Fire Alarm.
18 Brakes, Air.
19 Brake Linings.
20 Brooms, Fire.
21 Building Materials, Fire Retardant.
22 Cable & Wire, Fire Alarm.
23 Caps, Firemens.
24 Chains, Non-Skid, Fire Apparatus.
25 Chassis for Fire Apparatus.
26 Chemical Engines and Tanks.
27 City Service Trucks.
28 Coats & Suits, Firemen's Quick Hitch.
29 Combination Chemical & Hose Cars.
30 Cutting & Welding Equipment, Blow Torch.
31 Cutting & Welding Equipment, Electric.
32 Deluge Sets.
33 Door Openers, Fire Station, Automatic.
34 Extinguishers, Fire, Soda & Acid.
35 Extinguishers, Fire, Tetrachloride.
36 Extinguishers, Fire, Foam.
37 Extinguishers, Fire, Powder.
38 Fire Boat Nozzle Equipment.
39 Fire Department Supplies, General.
40 Fire Drills & Organizations.
41 Fire Exit Devices, Door Opening.
42 Fire Alarm Posts.
43 Fire Escapes, Portable.
44 Fire Escapes, Rigid.
45 First Aid Equipment.
46 Flare Lights.
47 Flashlights, Hand.
48 Foam Liquid for Extinguishers.
49 Gas Masks and Respirators.
50 Gas & Smoke Helmets.
51 Gasoline & Oil Handling Equipment.
52 Goggles, Firemen's.
53 Helmets, Metal, etc.
54 Hose Carts, Reels & Racks.
55 Hose Clamps.
56 Hose, Fire.
57 Hose, Chemical.
58 Hose Holders.
59 Hose Jackets.
60 Hose Standardization Tools.
61 Hydrant Draining Pumps.
62 Hydrants, Fire.
63 Jacks for Fire Trucks.
64 Jacks, Shoring & Prying.
65 Ladders, Fire.
66 Lightning Arresters.
67 Motorcycles, Fire Dept. Equipped.
68 Nets, Life.
69 Nozzles, Pipes & Misc. Brass Goods
70 Packings, Pump.
71 Pads, Pole Hole.
72 Paints, Fire Resisting.
73 Priming Ether, Motor.
74 Pumping Cars, Standard.
75 Pumping Cars, Foam.
76 Pumps, Fire Apparatus.
77 Pumps, Fire Service, Stationary.
78 Pumps, Portable, for Fire Protection.
79 Record Books, Fire.
80 Relief Valves.
81 Reviving Apparatus, Oxygen.
82 Rubber Clothing.
83 Searchlights.
84 Shingles, Fire Retardant.
85 Shirts, Firemen's Special.
86 Sirens, Apparatus & Chiefs Cars.
87 Sliding Poles.
88 Soda & Acid Chemicals.
89 Spark Plugs, Fire Apparatus & Motorcycles.
90 Squad and other Auxiliary Cars.
91 Sprinkler Head Shut-Offs.
92 Sprinkler Supervisory Service.
93 Sprinkler Systems, Automatic, Foam.
94 Sprinkler Systems, Automatic Water.
95 Starters, Fire Apparatus, Automatic, Air.
96 Steam Fire Engines.
97 Tarpaulins & Fire Blankets.
98 Tetrachloride Chemicals.
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100 Tires, Fire Apparatus, Pneumatic, Solid, Cushion and Non-Skid.
101 Tractors.
102 Traffic Clearing, Systems.
103 Triple Combination Pumping Cars.
104 Uniforms.
105 Water Towers.
106 Wheels, Cushion.
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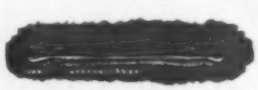

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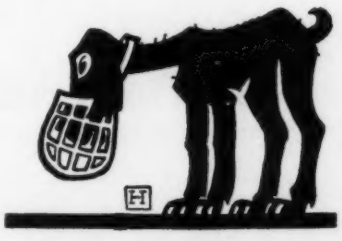

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- Tall office buildings;
- Piano factories;
- Armory (during merchandise exhibitions);
- Large area celluloid merchandise factory;
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—worth reading.

An Unusual Hose
—worth using.

FIRE HOSE

MADE LIKE AN AUTOMOBILE TIRE
IN TWO PARTS INNER TUBE *and* OUTER JACKET

"Fabric" Features:

Separable Inner Tube

—lasts longer than same quality tube cemented to the fabric because it is in complete repose when hose is not in service.

Will Not Slide or Buckle

—the diameter of the tube is reinforced in such a way as to eliminate it.

"Fabric" Features:

A Wax and Gum

treated fabric jacket—absolutely waterproofed by a special method. Cannot mildew or rot.

Other New Features—

The strands are "cabled" by a new process. The Durability of Fabric Hose is phenomenal.

FABRIC FIRE HOSE CO.
NEW YORK

HOSE facts of interest to every buyer of fire hose will be found in the interesting illustrated booklet issued by the Fabric Fire Hose Co., New York, telling not only why Fabric Wax and Para Gum Treated Loose Inner Tube Fire Hose is the most practical and efficient hose for you to use, but explaining the actual details of its manufacture so that you know just what you are buying and why it is superior. Write for it—Fabric Fire Hose Co., 127 Duane St., New York.

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